Honeywell

Serial Interface FTA for XYR 5000

User Manual

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TABLE OF CONTENTS

INDEX OF TABLES 2
INDEX OF FIGURES 2
REVISION HISTORY FOR DOCUMENT 34-XY-25-14 2
INTRODUCTION 2
SUPPORTING DOCUMENTATION 2
OVERVIEW 2
ELECTRICAL INTERFACES 2
REQUIRED HARDWARE 2
REQUIRED SOFTWARE AND LCN RESOURCES 2
INSTALLATION OVERVIEW STEPS 2
GENERAL LAYOUT DIAGRAM 2
AVAILABLE BASE RADIO PARAMETERS 2
- BASE RADIO HOLDING REGISTERS 2
- TRANSMITTER DATA TABLE 2

DATA BASE STRUCTURE 2
- ARRAY DATABASE STRUCTURE 2
- EXTENDED DATABASE STRUCTURE 2
- GRAPHICAL REPRESENTATION OF DATABASE STRUCTURE 2

DATA BASE UPDATE 2
REQUIRED DATABASE CONFIGURATION 2
EXTENDED DATABASE CONFIGURATION 2
CONTROL CAPABILITIES 2
ERROR HANDLING 2
SYSTEM PERFORMANCE 2
DATA BASE ORGANIZATION 2
- ARRAYS REQUIRED FOR UP TO 5 TRANSMITTERS 2
- ADDITIONAL ARRAYS REQUIRED FOR UP TO 25 TRANSMITTERS 2

TPS XYR DATABASE CONFIGURATOR 2
- PURPOSE 2
- OPERATION 2
- INSTALLATION 2
- EXECUTION 2

TPS / XYR 5000 DIAGNOSTIC SCHEMATIC 2
SAMPLE DATABASES AND CL 2
- SAMPLE xPM ARRAY DATABASE 2
- SAMPLE xPM ALARMABLE FLAG POINT 2
- SAMPLE xPM NON-ALARMABLE FLAG POINT 2
- SAMPLE xPM NUMERIC POINT 2
- SAMPLE xPM REGPV POINT 2
- SAMPLE xPM PROCMOD POINT 2
- SAMPLE xPM CL 2
- DISPLAY DATABASE FILE 2

PRE-INSTALLATION CHECKLIST 2
SETUP AND TROUBLE-SHOOTING GUIDE 2
ORDERING INFORMATION 2

INDEX OF TABLES

Table 1 - Required Components 2
Table 2 - Transmitter vs. Array Requirements 2
Table 3 - Base Transmitter Register Data 2
Table 4 - Transmitter Modbus Addresses and Data 2
Table 5 - XYR Solution Point Types 2
Table 6 - Parameter Entries for Array Points 2
Table 7 - Size and Configuration Table 2
Table 8 - Error Indications 2
Table 9 - Files built by XYR Configurator 2
Table 10 - Checks for Manual Point Name Changes 2

INDEX OF FIGURES

Figure 1 - FTA Connector 2
Figure 2 - Base Radio Connections 2

REVISION HISTORY FOR DOCUMENT 34-XY-25-14

REVISION	DATE	REASON	BY
1.0	19 May 2006	First Release.	Mike Stapley
1.01	22 May 2006	Revise verbiage to make clear.	Mike Stapley
1.02	30 April 2007	Add notes about data flags.	Mike Stapley

INTRODUCTION

The purpose of this document is to provide a detailed user manual for the Honeywell Serial Interface Field Termination Assembly (SI-FTA) to Honeywell's XYR 5000 (XYR5000).

This document addresses all topics that affect the functionality of the interface including the the communications protocol, parameter availability, data formats, system configuration, and user interface. As well, the document provides instructions for configuration and implementation of the device into the Honeywell TPS system. This document is not intended to replace the manuals supplied with the TDC system that give proper instruction on the installation and configuration of the required hardware. Neither does it supplant the information provided in the Wireless Base Radio User Manual.

With the SI-FTA for the XYR 5000, Honeywell provides access to all the data remotely available from the XYR 5000 and stores the data into arrays associated with the SI-FTA as described later within this document. As a part of the XYR SI-FTA package, a database builder executable is provided that will build the necessary TPS System database on the Advanced Process Manager (APM) or HighPerformance Process Manager (HPM) (hereinafter referred to collectively as xPM) (.EB files) for the array data and within the specified limits of the xPM, also builds the .EB files and Control Language (.CL) files requisite to move the data into Flags, Numerics, and Regulatory PVs.

NOTE: An important facet of preparing for installation is to run through the PRE-INSTALLATION CHECKLIST that is included within this document. While it is common to ignore such checklists, this checklist will help you prepare the answers that will be required by the XYR Database Configurator. Even more importantly, it may help you determine if your system has the capacity you will need to implement to your expectations PRIOR to actually beginning the exercise of building the database.

SUPPORTING DOCUMENTATION

Supporting documentation used in the preparation of this document includes:

Wireless Base Radio Installation and User's Manual
XYR5000 Line
34-XY-25-05
Rev. 1
02/04

Control Language High Performance Process Manager Reference Manual
HP27-510
9/99

APM/HPM Serial Interface Options
OP01-501
2/96

Process Manager I/O Installation
PM20-620
08/05

Control Language High-Performance Process Manager Data Entry
HP11-500
5/97

OVERVIEW

The XYR5000 Serial Interface FTA (SI-FTA) is designed to gather data from Honeywell's Wireless Base Radio XYR5000 and present it in a reasonable format in APM or HPM arrays. While the XYR5000 is able to communicate as a Modbus Slave with the standard Modbus Master SI-FTA, the data is provided in 5 floating point numbers. Using this format, there is a maximum of 48 transmitters per SI-FTA and obtaining the status flags from the floating point number representing the transmitter statuses requires intensive CL work.

The XYR5000 Serial Interface FTA takes into account the specified Modbus locations of the value data for all 50 possible transmitters associated with the base radio and manipulates that data into a more reasonable format. The values for PV1 are all stored together. The same is true for all of the PV2 and all of the PV3 values. As well, the status data is extracted from the floating point values and stored into individual flags for each transmitter. As an added bonus, the capability to convert the individual PV1, PV2, and PV3 value data from DegC to DegF is provided. To ease the burden of getting the raw PV values and flags from the Array points into scaleable and alarmable points, the XYR 5000 SI-FTA package provides a database configurator that will create the necessary files to build the necessary database and xPM Control Language (CL) based upon the customer's input.

This document only addresses communication through the Honeywell XYR 5000 from the TPS xPM (APM or HPM).

There are no writes effected to the XYR 5000 from this SI-FTA. The number of reads and the locations read are fixed based on the version of the radio and the number of transmitters implemented. The XYR SI-FTA acts as a Modbus master device and requests data from the base radio, distributing the returned data in the arrays as described herein.

ELECTRICAL INTERFACES

The XYR SI-FTA will connect to a single base radio via a communication link that may either be RS-232 or RS-485. The XYR 5000 has built in an RS-485 connection as its standard. This may be converted to RS-232 via an external device if desired.

For the specific hardware wiring, please refer to the Wireless Base Radio Installation and User's Manual. The connection between the SI-FTA and the XYR 5000 Base Radio is a two wire RS-485 connection. The specific connection is indicated below:

Serial Interface FTA		Base Radio MODBUS Conn.
Data -	----------	B
Data +	----------	A

The connector for the SI-FTA is shown below. The 'Data +' and 'Data –' connections for the RS-485 wires are clearly marked on the body of the Field Termination Assembly. The wiring for the RS-485 connection should be connected to be in the correct location.

Figure 1 - FTA Connector

Shown below is the connection at the Base Radio. Note that a terminating resistor is shown for the Modbus connection. If a terminating resistor is used, it must be applied at the extreme ends (only 2 ends) of the RS-485 connection.

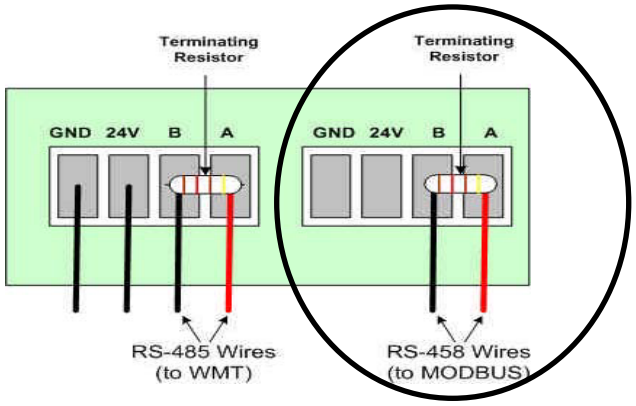


Figure 2 - Base Radio Connections

REQUIRED HARDWARE

- TPS System with UCN containing at least one APM or HPM
- Serial Interface IOP
- Power Adaptor board
- FTA (FTA is provided with the XYR Gateway package)

QTY	DESCRIPTION	IM&C PART #
1	Serial Interface IOP and XYR Firmware	50018503, 50018511, 50018512, & 50018413
1	Serial Interface FTA for XYR	50018504
1	Power Adapter	50018505
1	5 /1 Meter FTA Cable (incl w/ SI-FTA)	50018506 / 50018507
1	IOP to FTA shield Cable	50018508
1	30 cm Serial Cable (incl w/ SI-FTA)	50018509

A 2nd SI-FTA would also require another 51304465-100 cable.

If the SI-FTA is installed on an EPKS sytem, the parts list will differ.

REQUIRED SOFTWARE AND LCN RESOURCES

A 2nd SI-FTA would also require another 51304465-100 cable.

NEED	RESOURCE	Numbers Required
REQUIRED	GUS with File Transfer	One. Without this, the configurator will build files, but there will be no method for transferring the resultant files to the History Module. The configurator files can be used as a guide to manually building the database in this case.
REQUIRED	SI-IOP Board, Power Adapter, Cabling, and available xPM slot	One SI-IOP and Power Adapter set can handle 2 SI-FTA
REQUIRED	Serial Array Points	Minimum of 4. Refer to Table 2 - Transmitter vs. Array Requirements
DISCRETIONARY	Regulator PV points for alarmable and scaleable values	1 per alarmable PV value. There are 3 available PV values per transmitter – most transmitters do not utilize 3 PV values.
DISCRETIONARY	ProcMod point(s) for moving flags and numeric values (non alarming numbers) from array	Maximum 7 – depending on amount of flag/numeric data required
DISCRETIONARY	Flag Points for Transmitter Status	Up to 9 flags per transmitter Not all flags may be applicable on each transmitter. For example, a Square Root Function will not be applicable to a Temperature Transmitter.
DISCRETIONARY	Numeric Points for PV values	1 per non-alarming / non-scaling value requiring a PV. There are 3 available PV values per transmitter – most transmitters do not utilize 3 PV values.

Table 1 - Required Components

INSTALLATION OVERVIEW STEPS

These steps are not intended as a replacement for referring to the standard documentation for the xPM or for the Wireless Base Radio. They are provided to guide the user in knowing which steps must be followed for successful installation. It is presumed that the Wireless Base Radio is already configured properly.

NOTE: For TAC support of the implementation of the Discretionary features, the Implementor must be familiar with APM/HPM Serial Interface configuration, Process Point Building, & Process Module/CL Implementation. In addition, the completed pre-installation checklist must be available to assist the TAC Engineer.

IMPORTANT: If you do not have a GUS station with File Transfer loaded, you will be able to transfer neither the the supplied files (.DS and .DF) nor the Database Configuration files (resulting from its execution) to the History Module.

1. Complete the "PRE-INSTALLATION CHECKLIST" found on page 2.
2. Install Serial Interface IOP into the xPM
3. Install Power Adapter and SI-FTA (typically in the xPM cabinet).
4. Install cable connecting the Power Adapter to the xPM backplane and Serial Interface IOP.
5. Install cable connecting SI-FTA to the Power Adapter.
6. Configure Serial Interface IOP using the TDC system. While configuring, realize the XYR 5000 SI-FTA will require a number array points to work. Ensure the defined configuration has sufficient spare array points corresponding to the number of transmitters being implemented. The number of arrays required is as follows:

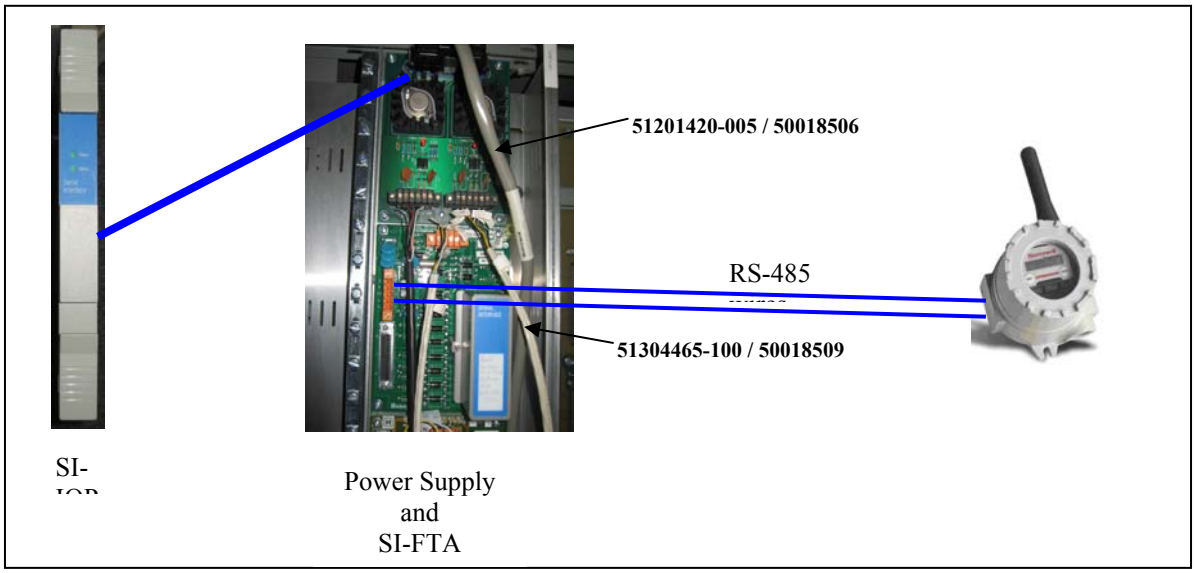
# Transmitters	# SI Arrays Required
1-5	4
6-10	5
11-15	6
16-20	7
21-25	8
26-30	11
31-35	12
36-40	13
41-45	14
46-50	15

Table 2 - Transmitter vs. Array Requirements

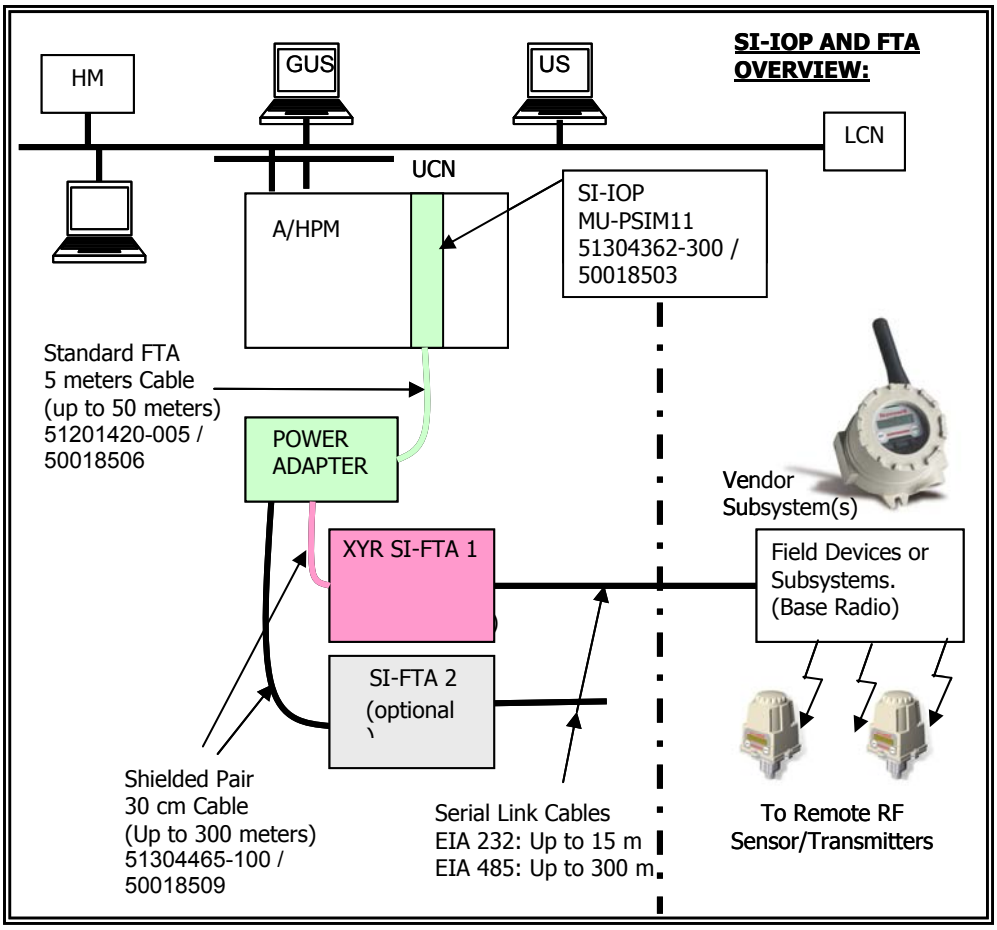
7. As well, if an extended database of Numerics, Flags, RegPVs, and ProcMod points are to be included so array data can be moved to 'PV' type points, the numbers configured in the xPM for these items must also be adequate for the planned increase in point types.

8. Connect the XYR 5000 Base Radio to the SI-FTA. This will require, as a minimum, a connection using a twisted pair of wires. A 120 ohm resistor at each end of the twisted pair may be required to allow proper communication using RS-485.
9. Use the XYR Database Configurator provided in this package to create the required files for the points / database. It will be necessary to have some specific information regarding the TDC system to properly build the database. Refer to the section in this document labeled XYR DATABASE CONFIGURATOR for specific information.
10. If specific modifications are desired in the resultant .EB files, those changes should be made at this point. These modifications may include ranges, limits, conversions, point names, etc. Point names changed using the XYR Configurator will be propogated throughout the resultant files.
11. If point names are manually changed in the .EB files created by the XYR Configurator, the .CL files should be examined also for the original point names and changed to match the new point names.
12. Move the files created by the XYR Database Configurator to the TDC History Module using File Transfer or other appropriate means. If the File Transfer facility is not available, the .EB files may be printed as templates for manual creation of files or for manual entry of the database using the TDC 3000.
13. Run the .EC file XYRLDARR.EC. This will use the XYRDBARR.EC file and the Array .EB file to build the required Array database.
14. If desired, run the .EC file XYRLDOTH.EC. This will use the XYRDBOTH.EC file, the .EB files, and the .CL files to create the extended databases (RegPV, Numeric, Flag, ProcMod), to compile the .CL required for the ProcMod points, and to move the resultant CL object files to the appropriate location on the History Module.
15. If ProcMod is used to move data from the Array database to other xPM points, the CL for these points must be loaded and the CL started.
16. RegPV points will need to be set ‘ACTIVE’.
17. Using the TDC3000 Picture Editor, read in the XYR_DIAG schematic and the XYRDDB display database. Use the ‘DEFINE INIT’ command to change the database point names to those implemented on the TDC system. Compile the schematic for diagnostic use.

GENERAL LAYOUT DIAGRAM



System Diagram



Connection to the field devices can be made as either RS-232 or RS-485 (2-wire).

Wiring Diagram for TDC connection of SI-FTA

AVAILABLE BASE RADIO PARAMETERS

The Model XYR 5000 Base Radio provides parameters both for the base radio and for each transmitter. The specific values can be found in the Wireless Base Radio Installation and User's Manual. The Base Radio has a set of values available that show information regarding the transmitters in operation (see Table 3 - Base Transmitter Register Data). The values for each individual transmitter consist of five (5) Floating Point values for each transmitter (see Table 4 - Transmitter Modbus Addresses and Data). All values are mapped into a simple format using data arrays for easy retrieval.

IMPORTANT NOTE: The XYR SI-FTA addresses the Base Radio in the REGMODE format only.

BASE RADIO HOLDING REGISTERS

Register Address	Description	Register / Data Type
0001	Device Type	16-bit Unsigned Integer
0002	Device Status	16-bit Unsigned Integer
0003	Number of Transmitters Expected	16-bit Unsigned Integer
0004	Number of Transmitters Communicating	16-bit Unsigned Integer
0005	Online/Offline Status of Field Units 1-16	16-bit Unsigned Integer
0006	Online/Offline Status of Field Units 17-32	16-bit Unsigned Integer
0007	Online/Offline Status of Field Units 33-48	16-bit Unsigned Integer
0008	Online/Offline Status of Field Units 49-50	16-bit Unsigned Integer
0009	Future Use	16-bit Unsigned Integer
0010	Future Use	16-bit Unsigned Integer

Table 3 - Base Transmitter Register Data

The specific layouts and details of the data may be found in the XYR 5000 Wireless Base Radio User Manual.

TRANSMITTER DATA TABLE

The data for the individual transmitters is stored in the Base Radio's database using the formula as shown in the following table.

Register Address	Description	Register Type
0001 (and 0002) + (RF ID *10)	Device Type	32 bit IEEE Floating Point
0003 (and 0004) + (RF ID *10)	Device Status	32 bit IEEE Floating Point
0005 (and 0006) + (RF ID *10)	Primary Sensor Value	32 bit IEEE Floating Point
0007 (and 0008) + (RF ID *10)	Secondary Sensor Value	32 bit IEEE Floating Point
0009 (and 0010) + (RF ID *10)	Tertiary Sensor Value	32 bit IEEE Floating Point

Table 4 - Transmitter Modbus Addresses and Data

The Device Types for the transmitters are stored into Array values associated with the XYR SI-FTA (see Array_2_Table and Array_9_Table). The individual PV1, PV2, and PV3 Sensor Values are stored into Floating Point arrays (15 values per array) (see Array_4_Table, etc.).

The Device Status is broken down into flags or discrete data for each individual sensor per the breakout given in the XYR 5000 Wireless Base Radio User Manual (see Array_3_Table and Array_10_Table).

The individual flags and the mnemonics used by default in the configuration are as follows:

- Onln – Online / Offline Status of the transmitter
- LBat – Low Battery
- Alrm – In Alarm
- SenE – Sensor Error
- ORng – Overrange condition in effect
- SysE – System Error
- S1Hi – Switch 1 is High
- S2Hi – Switch 2 is High
- SROn – Square Root Function in effect
- RSts – Future use

DATA BASE STRUCTURE

There are two main database portions involved with the XYR 5000 SI-FTA solution. First, there is a base array database associated directly with the SI-FTA that maintains in it the values read from the XYR 5000 Base Radio. Second, there is an 'extended' database where values can be moved for scaling of PVs, alarming, logging, and for other functions. Without the array database, there is no place to bring the values from the XYR 5000 into the TDC system. The serial arrays as described herein are always required. The 'extended' database is always optional. The TDC system will receive and be able to display XYR 5000 Base Radio data without the 'extended' database. This section describes the two databases.

ARRAY DATABASE STRUCTURE

Data acquired from a connected device by the firmware residing on a SI FTA is mapped into Array points. It is through this mapping that the data is communicated up through the SI card to the system database associated with the SI-FTA. In this version of the XYR SI-FTA, there are up to fifteen (15) array points of various types mapped into the FTA. The XYR SI-FTA utilizing fifteen (15) Serial Interface arrays is enough to store data for the full complement of transmitters available to an individual Base Radio.

The database configurator included with the XYR 5000 SI-FTA package will build files (including .EB files, .EC files, and other necessary) for the required array database. The configurator asks for a starting array slot and increments the arrays from that point. If the system requires the 15 array point slots to be non-sequential, the slot locations can be easily modified using either PC editing tools or the LCN Editor.

NOTE: Arrays must be built in the order shown below. If built out of order, the interface will not function correctly.

NOTE: Arrays should be built with the full sizes shown below. Where insufficient sizes are created, inconsistent data behavior may result.

The first four (4) arrays are required with any implementation. They contain flag and numeric data required for presentation of the transmitter data.

Array one (1) is a flag array of 151 elements that provides the user the ability to command the XYR SI-FTA to convert the PV values 1 through 3 from DegC to DegF values (150 flags) and shows the Online status of the Base Radio (1 flag).

Array two (2) is a twenty seven (27) numeric array that reflects the Device Type of the first twenty five (25) transmitters connected to the Base Radio plus the number of transmitters expected by the base radio and the number of transmitters currently responding.

Array three (3) is a two hundred fifty (250) element flag array that contains the status flags that are maintained by the Base Radio for the first twenty five (25) transmitters. There are ten (10) flags per transmitter, with each successive ten(10) flags representing the next transmitter.

Array four (4) is a 15 element array representing PV1, PV2, and PV3 of each of transmitters one (1) through five (5).

Array five (5), Array six (6), Array seven (7), and Array eight (8) represent the next sets of transmitters, with each array allowing five (5) more transmitters.

Array nine (9) is a twenty five (25) element array that reflects the Device Type of the second twenty five (25) transmitters connected to the Base Radio.

Array ten (10)) is a two hundred fifty (250) element flag array that contains the status flags that are maintained by the Base Radio for the second twenty five (25) transmitters. There are ten (10) flags per transmitter, with each successive ten(10) flags representing the next transmitter.

Array eleven (11) is a 15 element array representing PV1, PV2, and PV3 of each of transmitters twenty six (26) through thirty (30).

Array twelve (12), Array thirteen (13), Array fourteen (14), and Array fifteen (15) represent the next sets of transmitters, with each array allowing five (5) more transmitters.

EXTENDED DATABASE STRUCTURE

All transmitter data obtained from the XYR 5000 is nominally placed into arrays associated with the XYR 5000 SI-FTA. These values can be used in custom schematics and logs, but where there is a need or a desire to alarm, scale, or simply to represent values as a .PV rather than as an array element, additional points must be built that will receive the array data. There are four basic point types that can be used in such a configuration. The following table describes the point types and their usage.

POINT TYPE	USAGE
FLAG	There are a fixed number of alarmable Flag points. Others are not alarmable. The exact number depends on the PM type. An APM can handle up to 128 alarmable flags. An HPM handles up to 1024 alarmable flags. All other flags are non-alarmable. The Flag point PV is loaded by xPM Control Language (CL).
NUMERIC	There are a fixed number of Numeric points. The number is the same for both APM and HPM – 2047. Numeric points are non-alarmable and non-scaleable. They are simply repositories for values. The Numeric point PV is loaded by xPM CL.

POINT TYPE	USAGE
REGPV	There are a fixed number of RegPV points. These are alarmable and scaleable analog representations. The maximum number of RegPV points for APM is 80. For HPM, the maximum number of RegPV points is 125. The PV calculation may be selected by the user. There are many RegPV algorithms that may be utilized and implemented to meet the plant requirements. To keep things simple, the Database Configurator builds only the Data Acquisition PV Algorithm. The PV value for RegPV points will normally configured to be retrieved using 'General Input' points.
PROCMOD	ProcMod points may number as high as 160 on the APM and up to 250 on the HPM. These points, when combined with CL, run periodically to move the array data into the Flag and Numeric points. If no flag or numeric points are required on the system, these types of points can be omitted.

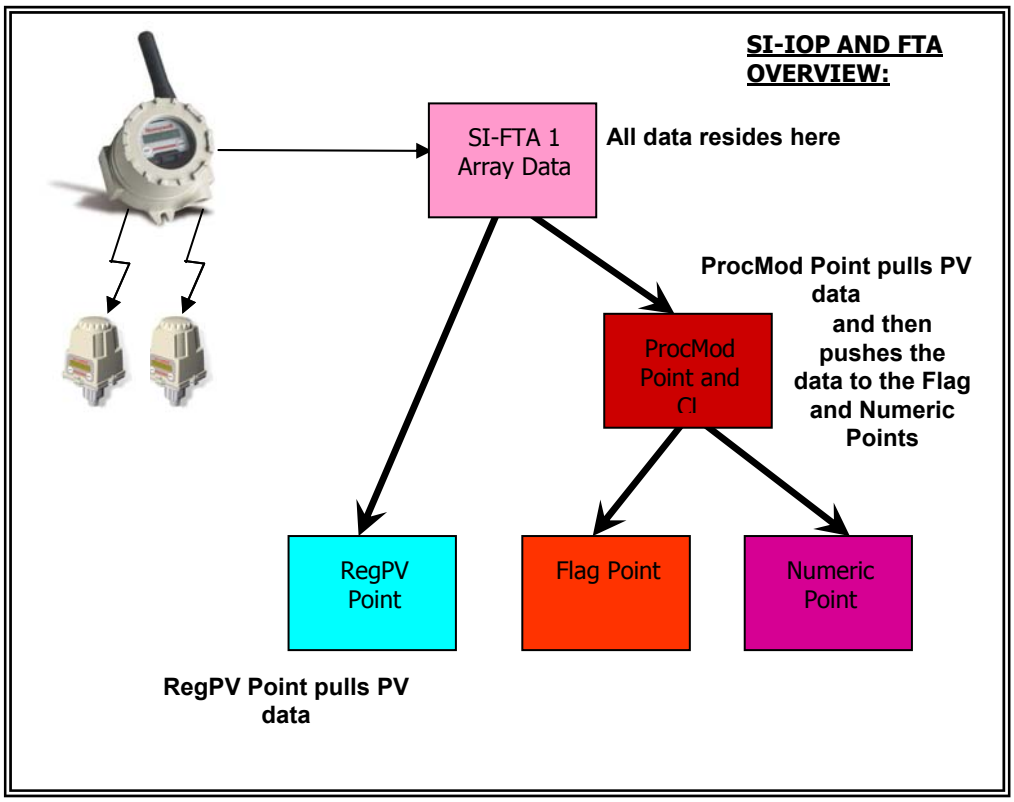
Table 5 - XYR Solution Point Types

A PC executable – XYR Database Configurator Tool – is provided with this package to help prepare the TPS system arrays necessary for the SI-FTA to work properly. As well, the package constructs .EB files and .CL as required for transferring data from arrays to non-array points on the xPM. The Database Configurator presumes that slots increment sequentially. If this is neither the case nor possible, the slot locations can be easily modified using either PC editing tools or the LCN Editor.

An example of each extended point type and the associated xPM CL is provided within this document.

GRAPHICAL REPRESENTATION OF DATABASE STRUCTURE

Database Flow Diagram


SI-IOP AND FTA OVERVIEW:
SI-FTA 1 Array Data
All data resides here
ProcMod Point pulls PV data and then pushes the data to the Flag and Numeric Points
ProcMod Point and CI
RegPV Point
Flag Point
Numeric Point
RegPV Point pulls PV data

How TDC points get their PV from the XYR 5000 SI-FTA

DATA BASE UPDATE

Once the firmware receives the necessary configuration from the xPM, the XYR 5000 SI-FTA builds its Modbus data request tables and begins to query the Base Radio for the required parameter data. Once the Modbus data is read, parsing of the data takes place through the data base starting with the first transmitter unit through the last transmitter unit. All parameters for all transmitters are fetched before moving on.

If the number of transmitters configured (not the number responding, but the number configured) is modified in the Base Radio, the data requested with the SI-FTA is automatically adjusted accordingly.

As a Base Radio's Modbus data table is requested, the returned data is inserted into the appropriate locations in the SI-FTA data base.

REQUIRED DATABASE CONFIGURATION

The specific layout for all arrays associated with the FTA can be found in the section on Database Organization. Proper configuration of the FTA slots is paramount to the correct operation of the interface. It is very important that the FTA slots be configured correctly. The following sections of the User Manual describe how each Array point is to be built. The Database Configurator will build the base points and fill in the required information.

To inform the FTA of the slot type and other information concerning the interface, certain parameters are used on the array point PED (parameter entry display). Some of the parameters and their range of values are in the following table.

TDC3000 Param	EPKS Param	Function	Range
DEVADDR	DEVADDR	XYR 5000 Modbus Address	Std Modbus ranges for a Modbus Device
AUXDATA1	AUXDATA(0)	Slot Number	Index Number (1-15) based on: "Table 7 - Size and Configuration Table"
AUXDATA2	AUXDATA(1)	Message Time-out	0.25 – 3 seconds (Array 1 only)
AUXDATA3	AUXDATA(2)	Link Type	For the XYR 5000, 485 (Array 1 only) (see APM/HPM Serial Interface Options or EPKS Serial Interface Module Implementation Guide for more details)
AUXDATA4	AUXDATA(3)	BAUD Rate	1200 – 19200, with the decimal indicating parity (0 = none, 1 = odd, 2 = even) (Array 1 only) (see APM/HPM Serial Interface Options or EPKS Serial Interface Module Implementation Guide for more details)
AB_Data1	AUXDATA(4)	Reserved	N/A
AB_Data2	AUXDATA(5)	Reserved	N/A

TDC3000 Param	EPKS Param	Function	Range
AB_Data3	AUXDATA(6)	Master or Listener	0 = Master; 1 = Listener (future) (Array 1 only)
AB_Data4	AUXDATA(7)	Version #	1 = Version 1; 2 = Version 2 (future) (Array 1 only)
SLOTNUM		Slot Number in the set of available xPM array points.	This must be unique per SI Array point.

Table 6 - Parameter Entries for Array Points

Other than for the first Auxdata location, any data entered into the Aux parameters for arrays 2-15 will be ignored.

Continue with the parameter configuration per the following table before saving the points.

INTERNAL SLOT NUMBER	DATA TYPE	AUXDATA1 INDEX	SIZE / # TO CONFIGURE
1	Flag / SIFLAGARRCH	15	151
2	Numeric / SINUMARRCH	11	27
3	Flag / SIFLAGARRCH	13	250
4	Numeric / SINUMARRCH	1	15
5	Numeric / SINUMARRCH	2	15
6	Numeric / SINUMARRCH	3	15
7	Numeric / SINUMARRCH	4	15
8	Numeric / SINUMARRCH	5	15
9	Numeric / SINUMARRCH	12	25
10	Flag / SIFLAGARRCH	14	250
11	Numeric / SINUMARRCH	6	15
12	Numeric / SINUMARRCH	7	15
13	Numeric / SINUMARRCH	8	15
14	Numeric / SINUMARRCH	9	15
15	Numeric / SINUMARRCH	10	15

Table 7 - Size and Configuration Table

Once all the required slot configurations are completed as described above, the FTA should be scanning. Note that Slot/Array 1 will need configuration data that the other arrays will not have to communicate properly.

If utilizing the interface on an EPKS system, when configuring the 2nd FTA, the 2nd set of arrays require AUXDATA(0) to be as shown in Table 7 - Size and Configuration Table.

A PC executable – XYR Database Configurator Tool – is provided with this package to help prepare the TPS system arrays necessary for the SI-FTA to work properly. As well, the

package constructs .EB files and .CL as required for transferring data from arrays to non-array points on the xPM.

EXTENDED DATABASE CONFIGURATION

Nominally, all data from the Base Radio is stored into xPM array elements. If this is adequate for your installation, then no other action is required.

However, if alarming, limit checking, or .PV parameter representation is desired or required, a separate database must be built. There are a limited number of Regulatory PVs that can be used for alarming, Numeric values that can be used to store values, Alarmable flags, and non-alarmable flags. Consult the xPM manuals for details.

A PC executable – XYR Database Configurator Tool – is provided with this package to help prepare the TPS system arrays necessary for the SI-FTA to work properly. As well, the package constructs .EB files and .CL as required for transferring data from arrays to non-array points on the xPM.

CONTROL CAPABILITIES

There are no control capabilities associated with the XYR 5000 Base Radio. It is treated as a 'read-only' device.

ERROR HANDLING

The interface firmware makes every attempt to detect and recover from communication errors experienced on the serial link. Among these are no response from the connected device, message framing errors, and parity errors. The SI ERROR field will display error data. The errors are enumerated in the following table. The firmware will try a read message a total of 3 times, waiting the configured message time-out time for a response after each attempt. If there is no response an error is posted by the SI-FTA. Below is a list of the error conditions detected and posted by the FTA. All errors are listed – some may not be applicable to this specific application.

SI ERROR AND COMMUNICATION ERROR ARRAY Indications:

TDC Notation	Indication
NO CONF	No Configuration
DEV ADDR	Device Address has a configuration error
DATATYPE	Data Type has a configuration error
STARTIDX	Start Index has a configuration error
# ELEMNT	Number of Elements Error. The arrays must have the number of elements as described herein.
TMOT VAL	Illegal Message Timeout Time
AUXMATCH	Signal/Modem Mismatch error
EX -	Exception or other Field generated error
SIG/MOD	Illegal Signal/Modem value.
BAUD/PAR	Illegal Baud/Parity value.
CONFIG	Generic Configuration Error
CHECKSUM	Checksum Error
DEBUG ER	Special debug error codes used in Factory Test
MAX CONF	Maximum Configuration Error
INV RESP	Invalid Response in the Receive Buffer
PARITY	Parity Error
MSGTMOUT	Message Time-out Error (no response)
UNIT CNF	Unit Not Configured
RX OVFLO	Receive Buffer Overflow
XMR EXCD	Number of transmitters exceeded.
ARRORDER	Arrays built out of order. Arrays must be built in order.
OK	No Problems

Table 8 - Error Indications

SYSTEM PERFORMANCE

The performance of any serial communications system is based upon some key factors. The first is the actual speed of the communications link being used, the actual time on the wire. This value is fixed based on the baud rate selected. Another factor of importance is the time it takes for the connected device to decode and respond to a query. It is also important to know how long it takes the host device to process the response it receives and then to generate the next query. These factors together determine the performance of the link.

XYR 5000 BASE RADIO

SI-FTA ARRAY

DATA BASE ORGANIZATION

ARRAYS REQUIRED FOR UP TO 5 TRANSMITTERS

LOC	Array 1
	ID 15
	1-5 Transmitters
	Conversion Flags
	Trans 1-50
	151 Flags
1	Trans.1 Conversion Flag 1
2	Trans.1 Conversion Flag 2
3	Trans.1 Conversion Flag 3
4	Trans.2 Conversion Flag 1
5	Trans.2 Conversion Flag 2
6	Trans.2 Conversion Flag 3
7	Trans.3 Conversion Flag 1
8	Trans.3 Conversion Flag 2
9	Trans.3 Conversion Flag 3
10	Trans.4 Conversion Flag 1
11	Trans.4 Conversion Flag 2
12	Trans.4 Conversion Flag 3
13	Trans.5 Conversion Flag 1
14	Trans.5 Conversion Flag 2
15	Trans.5 Conversion Flag 3
16	Trans.6 Conversion Flag 1
17	Trans.6 Conversion Flag 2
18	Trans.6 Conversion Flag 3
19	Trans.7 Conversion Flag 1
20	Trans.7 Conversion Flag 2
21	Trans.7 Conversion Flag 3
22	Trans.8 Conversion Flag 1
23	Trans.8 Conversion Flag 2
24	Trans.8 Conversion Flag 3
25	Trans.9 Conversion Flag 1
26	Trans.9 Conversion Flag 2
27	Trans.9 Conversion Flag 3
28	Trans.10 Conversion Flag 1
29	Trans.10 Conversion Flag 2
30	Trans.10 Conversion Flag 3
31	Trans.11 Conversion Flag 1
32	Trans.11 Conversion Flag 2
33	Trans.11 Conversion Flag 3

LOC	Array 1
34	Trans.12 Conversion Flag 1
35	Trans.12 Conversion Flag 2
36	Trans.12 Conversion Flag 3
37	Trans.13 Conversion Flag 1
38	Trans.13 Conversion Flag 2
39	Trans.13 Conversion Flag 3
40	Trans.14 Conversion Flag 1
41	Trans.14 Conversion Flag 2
42	Trans.14 Conversion Flag 3
43	Trans.15 Conversion Flag 1
44	Trans.15 Conversion Flag 2
45	Trans.15 Conversion Flag 3
46	Trans.16 Conversion Flag 1
47	Trans.16 Conversion Flag 2
48	Trans.16 Conversion Flag 3
49	Trans.17 Conversion Flag 1
50	Trans.17 Conversion Flag 2
51	Trans.17 Conversion Flag 3
52	Trans.18 Conversion Flag 1
53	Trans.18 Conversion Flag 2
54	Trans.18 Conversion Flag 3
55	Trans.19 Conversion Flag 1
56	Trans.19 Conversion Flag 2
57	Trans.19 Conversion Flag 3
58	Trans.20 Conversion Flag 1
59	Trans.20 Conversion Flag 2
60	Trans.20 Conversion Flag 3
61	Trans.21 Conversion Flag 1
62	Trans.21 Conversion Flag 2
63	Trans.21 Conversion Flag 3
64	Trans.22 Conversion Flag 1
65	Trans.22 Conversion Flag 2
66	Trans.22 Conversion Flag 3
67	Trans.23 Conversion Flag 1
68	Trans.23 Conversion Flag 2
69	Trans.23 Conversion Flag 3
70	Trans.24 Conversion Flag 1
71	Trans.24 Conversion Flag 2
72	Trans.24 Conversion Flag 3
73	Trans.25 Conversion Flag 1
74	Trans.25 Conversion Flag 2

LOC	Array 1
75	Trans.25 Conversion Flag 3
76	Trans.26 Conversion Flag 1
77	Trans.26 Conversion Flag 2
78	Trans.26 Conversion Flag 3
79	Trans.27 Conversion Flag 1
80	Trans.27 Conversion Flag 2
81	Trans.27 Conversion Flag 3
82	Trans.28 Conversion Flag 1
83	Trans.28 Conversion Flag 2
84	Trans.28 Conversion Flag 3
85	Trans.29 Conversion Flag 1
86	Trans.29 Conversion Flag 2
87	Trans.29 Conversion Flag 3
88	Trans.30 Conversion Flag 1
89	Trans.30 Conversion Flag 2
90	Trans.30 Conversion Flag 3
91	Trans.31 Conversion Flag 1
92	Trans.31 Conversion Flag 2
93	Trans.31 Conversion Flag 3
94	Trans.32 Conversion Flag 1
95	Trans.32 Conversion Flag 2
96	Trans.32 Conversion Flag 3
97	Trans.33 Conversion Flag 1
98	Trans.33 Conversion Flag 2
99	Trans.33 Conversion Flag 3
100	Trans.34 Conversion Flag 1
101	Trans.34 Conversion Flag 2
102	Trans.34 Conversion Flag 3
103	Trans.35 Conversion Flag 1
104	Trans.35 Conversion Flag 2
105	Trans.35 Conversion Flag 3
106	Trans.36 Conversion Flag 1
107	Trans.36 Conversion Flag 2
108	Trans.36 Conversion Flag 3
109	Trans.37 Conversion Flag 1
110	Trans.37 Conversion Flag 2
111	Trans.37 Conversion Flag 3
112	Trans.38 Conversion Flag 1
113	Trans.38 Conversion Flag 2
114	Trans.38 Conversion Flag 3
115	Trans.39 Conversion Flag 1
116	Trans.39 Conversion Flag 2
117	Trans.39 Conversion Flag 3
118	Trans.40 Conversion Flag 1
119	Trans.40 Conversion Flag 2
120	Trans.40 Conversion Flag 3
121	Trans.41 Conversion Flag 1

LOC	Array 1
122	Trans.41 Conversion Flag 2
123	Trans.41 Conversion Flag 3
124	Trans.42 Conversion Flag 1
125	Trans.42 Conversion Flag 2
126	Trans.42 Conversion Flag 3
127	Trans.43 Conversion Flag 1
128	Trans.43 Conversion Flag 2
129	Trans.43 Conversion Flag 3
130	Trans.44 Conversion Flag 1
131	Trans.44 Conversion Flag 2
132	Trans.44 Conversion Flag 3
133	Trans.45 Conversion Flag 1
134	Trans.45 Conversion Flag 2
135	Trans.45 Conversion Flag 3
136	Trans.46 Conversion Flag 1
137	Trans.46 Conversion Flag 2
138	Trans.46 Conversion Flag 3
139	Trans.47 Conversion Flag 1
140	Trans.47 Conversion Flag 2
141	Trans.47 Conversion Flag 3
142	Trans.48 Conversion Flag 1
143	Trans.48 Conversion Flag 2
144	Trans.48 Conversion Flag 3
145	Trans.49 Conversion Flag 1
146	Trans.49 Conversion Flag 2
147	Trans.49 Conversion Flag 3
148	Trans.50 Conversion Flag 1
149	Trans.50 Conversion Flag 2
150	Trans.50 Conversion Flag 3
151	Base Online

LOC	Array 2
	ID 11
	1-5 Transmitters
	Trans Types
	Trans 1-25
	27 Values
1	Trans. 1 Type
2	Trans. 2 Type
3	Trans. 3 Type
4	Trans. 4 Type
5	Trans. 5 Type
6	Trans. 6 Type
7	Trans. 7 Type
8	Trans. 8 Type
9	Trans. 9 Type
10	Trans. 10 Type
11	Trans. 11 Type
12	Trans. 12 Type
13	Trans. 13 Type
14	Trans. 14 Type
15	Trans. 15 Type
16	Trans. 16 Type
17	Trans. 17 Type
18	Trans. 18 Type
19	Trans. 19 Type
20	Trans. 20 Type
21	Trans. 21 Type
22	Trans. 22 Type
23	Trans. 23 Type
24	Trans. 24 Type
25	Trans. 25 Type
26	# Trans. Configured
27	# Trans. Responding

LOC	Array 3
	ID 13
	1-5 Transmitters
	Trans Flags
	Trans 1-25
	250 Flags
1	Trans. 1 Flag 1
2	Trans. 1 Flag 2
3	Trans. 1 Flag 3
4	Trans. 1 Flag 4
5	Trans. 1 Flag 5
6	Trans. 1 Flag 6

LOC	Array 3
7	Trans. 1 Flag 7
8	Trans. 1 Flag 8
9	Trans. 1 Flag 9
10	Trans. 1 Flag 10
11	Trans. 2 Flag 1
12	Trans. 2 Flag 2
13	Trans. 2 Flag 3
14	Trans. 2 Flag 4
15	Trans. 2 Flag 5
16	Trans. 2 Flag 6
17	Trans. 2 Flag 7
18	Trans. 2 Flag 8
19	Trans. 2 Flag 9
20	Trans. 2 Flag 10
21	Trans. 3 Flag 1
22	Trans. 3 Flag 2
23	Trans. 3 Flag 3
24	Trans. 3 Flag 4
25	Trans. 3 Flag 5
26	Trans. 3 Flag 6
27	Trans. 3 Flag 7
28	Trans. 3 Flag 8
29	Trans. 3 Flag 9
30	Trans. 3 Flag 10
31	Trans. 4 Flag 1
32	Trans. 4 Flag 2
33	Trans. 4 Flag 3
34	Trans. 4 Flag 4
35	Trans. 4 Flag 5
36	Trans. 4 Flag 6
37	Trans. 4 Flag 7
38	Trans. 4 Flag 8
39	Trans. 4 Flag 9
40	Trans. 4 Flag 10
41	Trans. 5 Flag 1
42	Trans. 5 Flag 2
43	Trans. 5 Flag 3
44	Trans. 5 Flag 4
45	Trans. 5 Flag 5
46	Trans. 5 Flag 6
47	Trans. 5 Flag 7
48	Trans. 5 Flag 8
49	Trans. 5 Flag 9
50	Trans. 5 Flag 10
51	Trans. 6 Flag 1
52	Trans. 6 Flag 2
53	Trans. 6 Flag 3

LOC	Array 3
54	Trans. 6 Flag 4
55	Trans. 6 Flag 5
56	Trans. 6 Flag 6
57	Trans. 6 Flag 7
58	Trans. 6 Flag 8
59	Trans. 6 Flag 9
60	Trans. 6 Flag 10
61	Trans. 7 Flag 1
62	Trans. 7 Flag 2
63	Trans. 7 Flag 3
64	Trans. 7 Flag 4
65	Trans. 7 Flag 5
66	Trans. 7 Flag 6
67	Trans. 7 Flag 7
68	Trans. 7 Flag 8
69	Trans. 7 Flag 9
70	Trans. 7 Flag 10
71	Trans. 8 Flag 1
72	Trans. 8 Flag 2
73	Trans. 8 Flag 3
74	Trans. 8 Flag 4
75	Trans. 8 Flag 5
76	Trans. 8 Flag 6
77	Trans. 8 Flag 7
78	Trans. 8 Flag 8
79	Trans. 8 Flag 9
80	Trans. 8 Flag 10
81	Trans. 9 Flag 1
82	Trans. 9 Flag 2
83	Trans. 9 Flag 3
84	Trans. 9 Flag 4
85	Trans. 9 Flag 5
86	Trans. 9 Flag 6
87	Trans. 9 Flag 7
88	Trans. 9 Flag 8
89	Trans. 9 Flag 9
90	Trans. 9 Flag 10
91	Trans. 10 Flag 1
92	Trans. 10 Flag 2
93	Trans. 10 Flag 3
94	Trans. 10 Flag 4
95	Trans. 10 Flag 5
96	Trans. 10 Flag 6
97	Trans. 10 Flag 7
98	Trans. 10 Flag 8
99	Trans. 10 Flag 9
100	Trans. 10 Flag 10

LOC	Array 3
101	Trans. 11 Flag 1
102	Trans. 11 Flag 2
103	Trans. 11 Flag 3
104	Trans. 11 Flag 4
105	Trans. 11 Flag 5
106	Trans. 11 Flag 6
107	Trans. 11 Flag 7
108	Trans. 11 Flag 8
109	Trans. 11 Flag 9
110	Trans. 11 Flag 10
111	Trans. 12 Flag 1
112	Trans. 12 Flag 2
113	Trans. 12 Flag 3
114	Trans. 12 Flag 4
115	Trans. 12 Flag 5
116	Trans. 12 Flag 6
117	Trans. 12 Flag 7
118	Trans. 12 Flag 8
119	Trans. 12 Flag 9
120	Trans. 12 Flag 10
121	Trans. 13 Flag 1
122	Trans. 13 Flag 2
123	Trans. 13 Flag 3
124	Trans. 13 Flag 4
125	Trans. 13 Flag 5
126	Trans. 13 Flag 6
127	Trans. 13 Flag 7
128	Trans. 13 Flag 8
129	Trans. 13 Flag 9
130	Trans. 13 Flag 10
131	Trans. 14 Flag 1
132	Trans. 14 Flag 2
133	Trans. 14 Flag 3
134	Trans. 14 Flag 4
135	Trans. 14 Flag 5
136	Trans. 14 Flag 6
137	Trans. 14 Flag 7
138	Trans. 14 Flag 8
139	Trans. 14 Flag 9
140	Trans. 14 Flag 10
141	Trans. 15 Flag 1
142	Trans. 15 Flag 2
143	Trans. 15 Flag 3
144	Trans. 15 Flag 4
145	Trans. 15 Flag 5
146	Trans. 15 Flag 6
147	Trans. 15 Flag 7

LOC	Array 3
148	Trans. 15 Flag 8
149	Trans. 15 Flag 9
150	Trans. 15 Flag 10
151	Trans. 16 Flag 1
152	Trans. 16 Flag 2
153	Trans. 16 Flag 3
154	Trans. 16 Flag 4
155	Trans. 16 Flag 5
156	Trans. 16 Flag 6
157	Trans. 16 Flag 7
158	Trans. 16 Flag 8
159	Trans. 16 Flag 9
160	Trans. 16 Flag 10
161	Trans. 17 Flag 1
162	Trans. 17 Flag 2
163	Trans. 17 Flag 3
164	Trans. 17 Flag 4
165	Trans. 17 Flag 5
166	Trans. 17 Flag 6
167	Trans. 17 Flag 7
168	Trans. 17 Flag 8
169	Trans. 17 Flag 9
170	Trans. 17 Flag 10
171	Trans. 18 Flag 1
172	Trans. 18 Flag 2
173	Trans. 18 Flag 3
174	Trans. 18 Flag 4
175	Trans. 18 Flag 5
176	Trans. 18 Flag 6
177	Trans. 18 Flag 7
178	Trans. 18 Flag 8
179	Trans. 18 Flag 9
180	Trans. 18 Flag 10
181	Trans. 19 Flag 1
182	Trans. 19 Flag 2
183	Trans. 19 Flag 3
184	Trans. 19 Flag 4
185	Trans. 19 Flag 5
186	Trans. 19 Flag 6
187	Trans. 19 Flag 7
188	Trans. 19 Flag 8
189	Trans. 19 Flag 9
190	Trans. 19 Flag 10
191	Trans. 20 Flag 1
192	Trans. 20 Flag 2
193	Trans. 20 Flag 3
194	Trans. 20 Flag 4

LOC	Array 3
195	Trans. 20 Flag 5
196	Trans. 20 Flag 6
197	Trans. 20 Flag 7
198	Trans. 20 Flag 8
199	Trans. 20 Flag 9
200	Trans. 20 Flag 10
201	Trans. 21 Flag 1
202	Trans. 21 Flag 2
203	Trans. 21 Flag 3
204	Trans. 21 Flag 4
205	Trans. 21 Flag 5
206	Trans. 21 Flag 6
207	Trans. 21 Flag 7
208	Trans. 21 Flag 8
209	Trans. 21 Flag 9
210	Trans. 21 Flag 10
211	Trans. 22 Flag 1
212	Trans. 22 Flag 2
213	Trans. 22 Flag 3
214	Trans. 22 Flag 4
215	Trans. 22 Flag 5
216	Trans. 22 Flag 6
217	Trans. 22 Flag 7
218	Trans. 22 Flag 8
219	Trans. 22 Flag 9
220	Trans. 22 Flag 10
221	Trans. 23 Flag 1
222	Trans. 23 Flag 2
223	Trans. 23 Flag 3
224	Trans. 23 Flag 4
225	Trans. 23 Flag 5
226	Trans. 23 Flag 6
227	Trans. 23 Flag 7
228	Trans. 23 Flag 8
229	Trans. 23 Flag 9
230	Trans. 23 Flag 10
231	Trans. 24 Flag 1
232	Trans. 24 Flag 2
233	Trans. 24 Flag 3
234	Trans. 24 Flag 4
235	Trans. 24 Flag 5
236	Trans. 24 Flag 6
237	Trans. 24 Flag 7
238	Trans. 24 Flag 8
239	Trans. 24 Flag 9
240	Trans. 24 Flag 10
241	Trans. 25 Flag 1

LOC	Array 3
242	Trans. 25 Flag 2
243	Trans. 25 Flag 3
244	Trans. 25 Flag 4
245	Trans. 25 Flag 5
246	Trans. 25 Flag 6
247	Trans. 25 Flag 7
248	Trans. 25 Flag 8
249	Trans. 25 Flag 9
250	Trans. 25 Flag 10

LOC	Array 4
	ID 1
	1-5 Transmitters
	PVs
	Trans 1-5
	15 FP Values
1	Trans. 1 PV 1
2	Trans. 1 PV 2
3	Trans. 1 PV 3
4	Trans. 2 PV 1
5	Trans. 2 PV 2
6	Trans. 2 PV 3
7	Trans. 3 PV 1
8	Trans. 3 PV 2
9	Trans. 3 PV 3
10	Trans. 4 PV 1
11	Trans. 4 PV 2
12	Trans. 4 PV 3
13	Trans. 5 PV 1
14	Trans. 5 PV 2
15	Trans. 5 PV 3

ADDITIONAL ARRAYS REQUIRED FOR UP TO 25 TRANSMITTERS

LOC	Array 5
	ID 2
	6-10 Transmitterse
	PVs
	Trans 6-10
	15 FP Values
1	Trans. 6 PV 1
2	Trans. 6 PV 2
3	Trans. 6 PV 3
4	Trans. 7 PV 1
5	Trans. 7 PV 2
6	Trans. 7 PV 3
7	Trans. 8 PV 1
8	Trans. 8 PV 2
9	Trans. 8 PV 3
10	Trans. 9 PV 1
11	Trans. 9 PV 2
12	Trans. 9 PV 3
13	Trans. 10 PV 1
14	Trans. 10 PV 2
15	Trans. 10 PV 3

LOC	Array 7
	ID 4
	16-20 Transmitters
	PVs
	Trans 16-20
	15 FP Values
1	Trans. 16 PV 1
2	Trans. 16 PV 2
3	Trans. 16 PV 3
4	Trans. 17 PV 1
5	Trans. 17 PV 2
6	Trans. 17 PV 3
7	Trans. 18 PV 1
8	Trans. 18 PV 2
9	Trans. 18 PV 3
10	Trans. 19 PV 1
11	Trans. 19 PV 2
12	Trans. 19 PV 3
13	Trans. 20 PV 1
14	Trans. 20 PV 2
15	Trans. 20 PV 3

LOC	Array 6
	ID 3
	11-15 Transmitters
	PVs
	Trans 11-15
	15 FP Values
1	Trans. 11 PV 1
2	Trans. 11 PV 2
3	Trans. 11 PV 3
4	Trans. 12 PV 1
5	Trans. 12 PV 2
6	Trans. 12 PV 3
7	Trans. 13 PV 1
8	Trans. 13 PV 2
9	Trans. 13 PV 3
10	Trans. 14 PV 1
11	Trans. 14 PV 2
12	Trans. 14 PV 3
13	Trans. 15 PV 1
14	Trans. 15 PV 2
15	Trans. 15 PV 3

LOC	Array 8
	ID 5
	21-25 Transmitters
	PVs
	Trans 21-25
	15 FP Values
1	Trans. 21 PV 1
2	Trans. 21 PV 2
3	Trans. 21 PV 3
4	Trans. 22 PV 1
5	Trans. 22 PV 2
6	Trans. 22 PV 3
7	Trans. 23 PV 1
8	Trans. 23 PV 2
9	Trans. 23 PV 3
10	Trans. 24 PV 1
11	Trans. 24 PV 2
12	Trans. 24 PV 3
13	Trans. 25 PV 1
14	Trans. 25 PV 2
15	Trans. 25 PV 3

ADDITIONAL ARRAYS REQUIRED FOR UP TO 30 TRANSMITTERS

LOC	Array 9
	ID 12
	26-30 Transmitters
	Trans Types
	Trans 26-50
	25 Values
1	Trans. 26 Type
2	Trans. 27 Type
3	Trans. 28 Type
4	Trans. 29 Type
5	Trans. 30 Type
6	Trans. 31 Type
7	Trans. 32 Type
8	Trans. 33 Type
9	Trans. 34 Type
10	Trans. 35 Type
11	Trans. 36 Type
12	Trans. 37 Type
13	Trans. 38 Type
14	Trans. 39 Type
15	Trans. 40 Type
16	Trans. 41 Type
17	Trans. 42 Type
18	Trans. 43 Type
19	Trans. 44 Type
20	Trans. 45 Type
21	Trans. 46 Type
22	Trans. 47 Type
23	Trans. 48 Type
24	Trans. 49 Type
25	Trans. 50 Type

LOC	Array 10
	ID 14
	26-30 Transmitters
	Trans Flags
	Trans 26-50
	250 Flags
1	Trans. 26 Flag 1
2	Trans. 26 Flag 2
3	Trans. 26 Flag 3
4	Trans. 26 Flag 4
5	Trans. 26 Flag 5
6	Trans. 26 Flag 6

LOC	Array 10
7	Trans. 26 Flag 7
8	Trans. 26 Flag 8
9	Trans. 26 Flag 9
10	Trans. 26 Flag 10
11	Trans. 27 Flag 1
12	Trans. 27 Flag 2
13	Trans. 27 Flag 3
14	Trans. 27 Flag 4
15	Trans. 27 Flag 5
16	Trans. 27 Flag 6
17	Trans. 27 Flag 7
18	Trans. 27 Flag 8
19	Trans. 27 Flag 9
20	Trans. 27 Flag 10
21	Trans. 28 Flag 1
22	Trans. 28 Flag 2
23	Trans. 28 Flag 3
24	Trans. 28 Flag 4
25	Trans. 28 Flag 5
26	Trans. 28 Flag 6
27	Trans. 28 Flag 7
28	Trans. 28 Flag 8
29	Trans. 28 Flag 9
30	Trans. 28 Flag 10
31	Trans. 29 Flag 1
32	Trans. 29 Flag 2
33	Trans. 29 Flag 3
34	Trans. 29 Flag 4
35	Trans. 29 Flag 5
36	Trans. 29 Flag 6
37	Trans. 29 Flag 7
38	Trans. 29 Flag 8
39	Trans. 29 Flag 9
40	Trans. 29 Flag 10
41	Trans. 30 Flag 1
42	Trans. 30 Flag 2
43	Trans. 30 Flag 3
44	Trans. 30 Flag 4
45	Trans. 30 Flag 5
46	Trans. 30 Flag 6
47	Trans. 30 Flag 7
48	Trans. 30 Flag 8
49	Trans. 30 Flag 9
50	Trans. 30 Flag 10
51	Trans. 31 Flag 1
52	Trans. 31 Flag 2
53	Trans. 31 Flag 3

LOC	Array 10
54	Trans. 31 Flag 4
55	Trans. 31 Flag 5
56	Trans. 31 Flag 6
57	Trans. 31 Flag 7
58	Trans. 31 Flag 8
59	Trans. 31 Flag 9
60	Trans. 31 Flag 10
61	Trans. 32 Flag 1
62	Trans. 32 Flag 2
63	Trans. 32 Flag 3
64	Trans. 32 Flag 4
65	Trans. 32 Flag 5
66	Trans. 32 Flag 6
67	Trans. 32 Flag 7
68	Trans. 32 Flag 8
69	Trans. 32 Flag 9
70	Trans. 32 Flag 10
71	Trans. 33 Flag 1
72	Trans. 33 Flag 2
73	Trans. 33 Flag 3
74	Trans. 33 Flag 4
75	Trans. 33 Flag 5
76	Trans. 33 Flag 6
77	Trans. 33 Flag 7
78	Trans. 33 Flag 8
79	Trans. 33 Flag 9
80	Trans. 33 Flag 10
81	Trans. 34 Flag 1
82	Trans. 34 Flag 2
83	Trans. 34 Flag 3
84	Trans. 34 Flag 4
85	Trans. 34 Flag 5
86	Trans. 34 Flag 6
87	Trans. 34 Flag 7
88	Trans. 34 Flag 8
89	Trans. 34 Flag 9
90	Trans. 34 Flag 10
91	Trans. 35 Flag 1
92	Trans. 35 Flag 2
93	Trans. 35 Flag 3
94	Trans. 35 Flag 4
95	Trans. 35 Flag 5
96	Trans. 35 Flag 6
97	Trans. 35 Flag 7
98	Trans. 35 Flag 8
99	Trans. 35 Flag 9
100	Trans. 35 Flag 10

LOC	Array 10
101	Trans. 36 Flag 1
102	Trans. 36 Flag 2
103	Trans. 36 Flag 3
104	Trans. 36 Flag 4
105	Trans. 36 Flag 5
106	Trans. 36 Flag 6
107	Trans. 36 Flag 7
108	Trans. 36 Flag 8
109	Trans. 36 Flag 9
110	Trans. 36 Flag 10
111	Trans. 37 Flag 1
112	Trans. 37 Flag 2
113	Trans. 37 Flag 3
114	Trans. 37 Flag 4
115	Trans. 37 Flag 5
116	Trans. 37 Flag 6
117	Trans. 37 Flag 7
118	Trans. 37 Flag 8
119	Trans. 37 Flag 9
120	Trans. 37 Flag 10
121	Trans. 38 Flag 1
122	Trans. 38 Flag 2
123	Trans. 38 Flag 3
124	Trans. 38 Flag 4
125	Trans. 38 Flag 5
126	Trans. 38 Flag 6
127	Trans. 38 Flag 7
128	Trans. 38 Flag 8
129	Trans. 38 Flag 9
130	Trans. 38 Flag 10
131	Trans. 39 Flag 1
132	Trans. 39 Flag 2
133	Trans. 39 Flag 3
134	Trans. 39 Flag 4
135	Trans. 39 Flag 5
136	Trans. 39 Flag 6
137	Trans. 39 Flag 7
138	Trans. 39 Flag 8
139	Trans. 39 Flag 9
140	Trans. 39 Flag 10
141	Trans. 40 Flag 1
142	Trans. 40 Flag 2
143	Trans. 40 Flag 3
144	Trans. 40 Flag 4
145	Trans. 40 Flag 5
146	Trans. 40 Flag 6
147	Trans. 40 Flag 7

LOC	Array 10
148	Trans. 40 Flag 8
149	Trans. 40 Flag 9
150	Trans. 40 Flag 10
151	Trans. 41 Flag 1
152	Trans. 41 Flag 2
153	Trans. 41 Flag 3
154	Trans. 41 Flag 4
155	Trans. 41 Flag 5
156	Trans. 41 Flag 6
157	Trans. 41 Flag 7
158	Trans. 41 Flag 8
159	Trans. 41 Flag 9
160	Trans. 41 Flag 10
161	Trans. 42 Flag 1
162	Trans. 42 Flag 2
163	Trans. 42 Flag 3
164	Trans. 42 Flag 4
165	Trans. 42 Flag 5
166	Trans. 42 Flag 6
167	Trans. 42 Flag 7
168	Trans. 42 Flag 8
169	Trans. 42 Flag 9
170	Trans. 42 Flag 10
171	Trans. 43 Flag 1
172	Trans. 43 Flag 2
173	Trans. 43 Flag 3
174	Trans. 43 Flag 4
175	Trans. 43 Flag 5
176	Trans. 43 Flag 6
177	Trans. 43 Flag 7
178	Trans. 43 Flag 8
179	Trans. 43 Flag 9
180	Trans. 43 Flag 10
181	Trans. 44 Flag 1
182	Trans. 44 Flag 2
183	Trans. 44 Flag 3
184	Trans. 44 Flag 4
185	Trans. 44 Flag 5
186	Trans. 44 Flag 6
187	Trans. 44 Flag 7
188	Trans. 44 Flag 8
189	Trans. 44 Flag 9
190	Trans. 44 Flag 10
191	Trans. 45 Flag 1
192	Trans. 45 Flag 2
193	Trans. 45 Flag 3
194	Trans. 45 Flag 4

LOC	Array 10
195	Trans. 45 Flag 5
196	Trans. 45 Flag 6
197	Trans. 45 Flag 7
198	Trans. 45 Flag 8
199	Trans. 45 Flag 9
200	Trans. 45 Flag 10
201	Trans. 46 Flag 1
202	Trans. 46 Flag 2
203	Trans. 46 Flag 3
204	Trans. 46 Flag 4
205	Trans. 46 Flag 5
206	Trans. 46 Flag 6
207	Trans. 46 Flag 7
208	Trans. 46 Flag 8
209	Trans. 46 Flag 9
210	Trans. 46 Flag 10
211	Trans. 47 Flag 1
212	Trans. 47 Flag 2
213	Trans. 47 Flag 3
214	Trans. 47 Flag 4
215	Trans. 47 Flag 5
216	Trans. 47 Flag 6
217	Trans. 47 Flag 7
218	Trans. 47 Flag 8
219	Trans. 47 Flag 9
220	Trans. 47 Flag 10
221	Trans. 48 Flag 1
222	Trans. 48 Flag 2
223	Trans. 48 Flag 3
224	Trans. 48 Flag 4
225	Trans. 48 Flag 5
226	Trans. 48 Flag 6
227	Trans. 48 Flag 7
228	Trans. 48 Flag 8
229	Trans. 48 Flag 9
230	Trans. 48 Flag 10
231	Trans. 49 Flag 1
232	Trans. 49 Flag 2
233	Trans. 49 Flag 3
234	Trans. 49 Flag 4
235	Trans. 49 Flag 5
236	Trans. 49 Flag 6
237	Trans. 49 Flag 7
238	Trans. 49 Flag 8
239	Trans. 49 Flag 9
240	Trans. 49 Flag 10
241	Trans. 50 Flag 1

LOC	Array 10
242	Trans. 50 Flag 2
243	Trans. 50 Flag 3
244	Trans. 50 Flag 4
245	Trans. 50 Flag 5
246	Trans. 50 Flag 6
247	Trans. 50 Flag 7
248	Trans. 50 Flag 8
249	Trans. 50 Flag 9
250	Trans. 50 Flag 10

LOC	Array 11
	ID 6
	26-30 Transmitters
	PVs
	Trans 26-30
	15 FP Values
1	Trans. 26 PV 1
2	Trans. 26 PV 2
3	Trans. 26 PV 3
4	Trans. 27 PV 1
5	Trans. 27 PV 2
6	Trans. 27 PV 3
7	Trans. 28 PV 1
8	Trans. 28 PV 2
9	Trans. 28 PV 3
10	Trans. 29 PV 1
11	Trans. 29 PV 2
12	Trans. 29 PV 3
13	Trans. 30 PV 1
14	Trans. 30 PV 2
15	Trans. 30 PV 3

ADDITIONAL ARRAYS REQUIRED FOR UP TO
50 TRANSMITTERS

LOC	Array 12
	ID 7
	31-35 Transmitters
	PVs
	Trans 31-35
	15 FP Values
1	Trans. 31 PV 1
2	Trans. 31 PV 2
3	Trans. 31 PV 3
4	Trans. 32 PV 1
5	Trans. 32 PV 2
6	Trans. 32 PV 3
7	Trans. 33 PV 1
8	Trans. 33 PV 2
9	Trans. 33 PV 3
10	Trans. 34 PV 1
11	Trans. 34 PV 2
12	Trans. 34 PV 3
13	Trans. 35 PV 1
14	Trans. 35 PV 2
15	Trans. 35 PV 3

LOC	Array 14
	ID 9
	41-45 Transmitters
	PVs
	Trans 41-45
	15 FP Values
1	Trans. 41 PV 1
2	Trans. 41 PV 2
3	Trans. 41 PV 3
4	Trans. 42 PV 1
5	Trans. 42 PV 2
6	Trans. 42 PV 3
7	Trans. 43 PV 1
8	Trans. 43 PV 2
9	Trans. 43 PV 3
10	Trans. 44 PV 1
11	Trans. 44 PV 2
12	Trans. 44 PV 3
13	Trans. 45 PV 1
14	Trans. 45 PV 2
15	Trans. 45 PV 3

LOC	Array 13
	ID 8
	36-40 Transmitters
	PVs
	Trans 36-40
	15 FP Values
1	Trans. 36 PV 1
2	Trans. 36 PV 2
3	Trans. 36 PV 3
4	Trans. 37 PV 1
5	Trans. 37 PV 2
6	Trans. 37 PV 3
7	Trans. 38 PV 1
8	Trans. 38 PV 2
9	Trans. 38 PV 3
10	Trans. 39 PV 1
11	Trans. 39 PV 2
12	Trans. 39 PV 3
13	Trans. 40 PV 1
14	Trans. 40 PV 2
15	Trans. 40 PV 3

LOC	Array 15
	ID 10
	46-50 Transmitters
	PVs
	Trans 46-50
	15 FP Values
1	Trans. 46 PV 1
2	Trans. 46 PV 2
3	Trans. 46 PV 3
4	Trans. 47 PV 1
5	Trans. 47 PV 2
6	Trans. 47 PV 3
7	Trans. 48 PV 1
8	Trans. 48 PV 2
9	Trans. 48 PV 3
10	Trans. 49 PV 1
11	Trans. 49 PV 2
12	Trans. 49 PV 3
13	Trans. 50 PV 1
14	Trans. 50 PV 2
15	Trans. 50 PV 3

TPS XYR DATABASE CONFIGURATOR

PURPOSE

The purpose of the XYR Database Configurator is to build the database required by the TPS system for bringing data from the XYR 5000 into the TPS system. There are two portions to the database. The array database where all data brought in by the SI-FTA is placed. The secondary (optional) database provides an opportunity to move the array data into alarmable data locations.

OPERATION

NOTE: The XYR Database Configurator is for use ONLY with the TPS system. It is not created with the intention of building a database for the EPKS system.

There is data required by the XYR Database Configurator that must be obtained from the existing Control System. Once entered, a database is created very simply. However, because the data to be supplied is critical to the successful operation of the database (and subsequently, of the Gateway), it is fully expected that this database will be created and loaded onto the TPS system by plant engineering personnel.

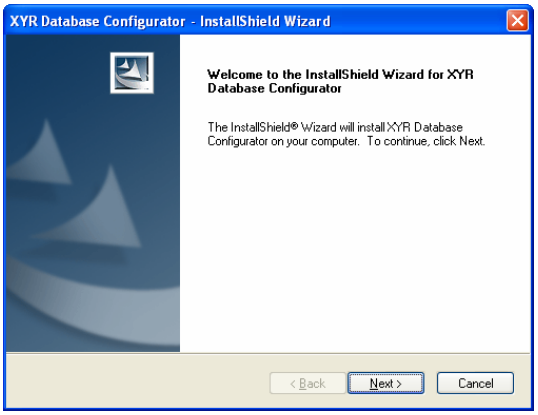
INSTALLATION

The XYR Database Configurator is a simple tool provided to allow the user to easily create the required database for the XYRadio SI-FTA as well as to create any optional database and PM/CL for value storage on the HPM.

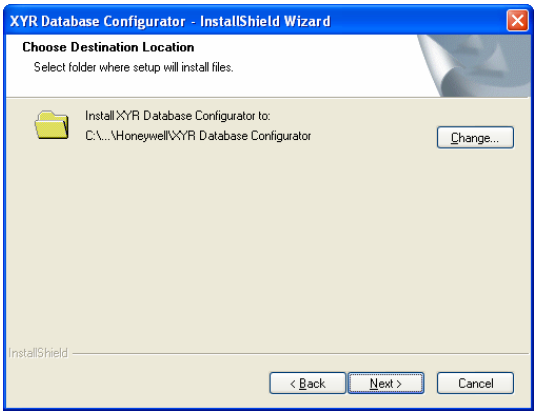
The XYR Database Configurator must be run on a Windows based PC. This PC does not have to be a part of the TPS system.

To install the configurator, from the provided CD, execute the file ‘Setup.exe’.

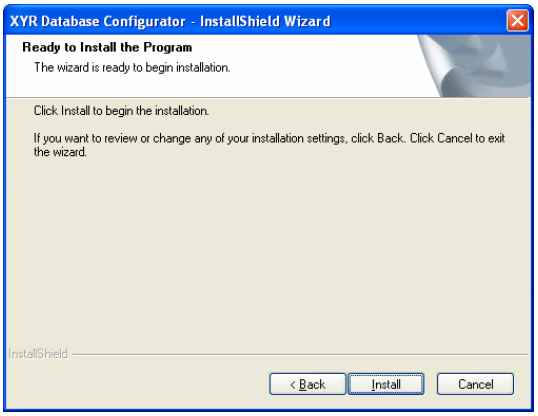
Once executing, the program will begin its installation.


XYR Database Configurator - InstallShield Wizard
Welcome to the InstallShield Wizard for XYR Database Configurator
The InstallShield® Wizard will install XYR Database Configurator on your computer. To continue, click Next.
< Back
Next >
Cancel

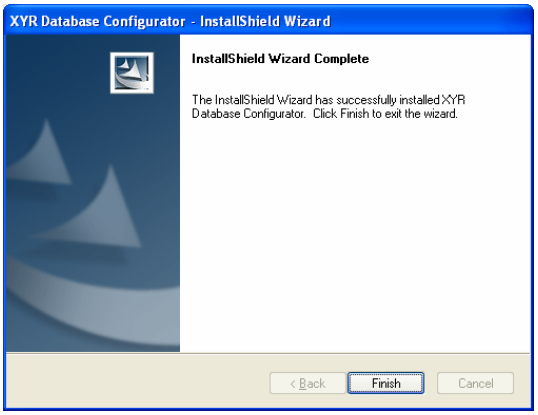
Click ‘Next’ to continue.



If the installation path is incorrect, first select ‘Change’ and select the desired path for installation of the XYR Database Configurator. Once the installation path is correct, select ‘Next’ to continue.


XYR Database Configurator - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

To being the installation, click on the ‘Install’ button. The XYR Database Configurator will install itself at the indicated path.


XYR Database Configurator - InstallShield Wizard
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed XYR Database Configurator. Click Finish to exit the wizard.
< Back
Finish
Cancel

A successful installation will be indicated with the 'Complete' screen. Select 'Finish' to close the window.

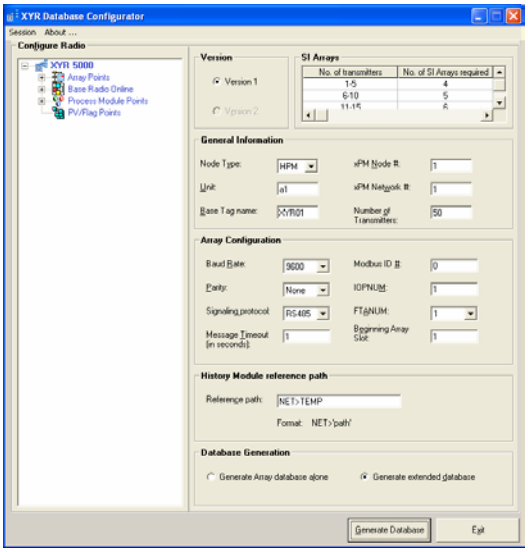
EXECUTION

The XYRadio Configurator can be found using the following selection:

'Start/All Programs/Honeywell/XYRadio Configurator'

Using that path, select the 'Launch XYR 5000 Config.exe'.

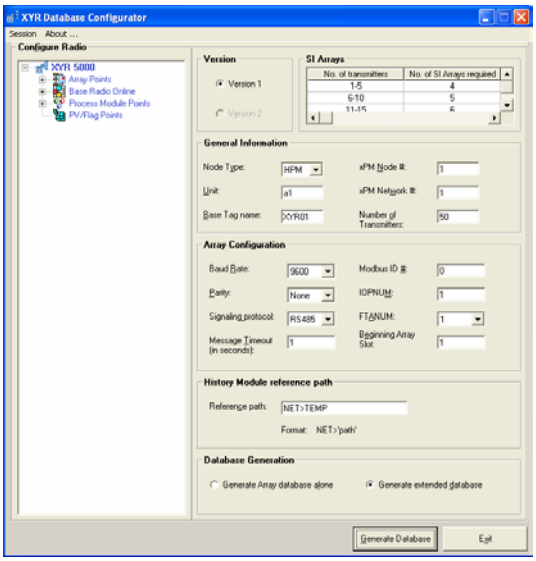
The following screen will be displayed:



The Menu Bar provides two main choices: 'Session' and 'About'.

The 'Session' selection will provide the option to save the current session, to read in a saved session, or to exit the current session. At any time, the user may either load a previously saved session or save the current session for future use.

The 'About' selection provides the user the Version number for the running configurator.



Some general notes about the left side of the configurator window:

- The left side of the configurator window represents configured elements of the system. Immediately, you will see 'XYRadio' and 'Base Radio Online', 'Process Module Points', and 'Radio_1'.
- Clicking on the '+' for each will open up configured data.
- When the default point name (tag name) is shown, a 'right click' of the mouse will allow the user to change the name to match system requirements.
- A point for 'Base Radio Online' is shown, but is only utilized if an extended database is generated.
- A Process Module Point (Procmod) is generated and shown, but is only utilized if an extended database is generated.
- Until transmitters are selected, there are no entries under 'Radio_1'.

The right side of the configurator window allows the user to input pertinent data for the building of a valid database.

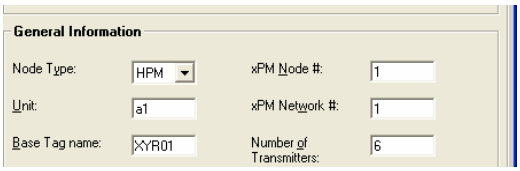
Version

The first block on the right side will eventually allow a version selection. For now, the only version available is 'Version 1'.

SI Arrays

The number of arrays required for a given number of transmitters is shown to help determine the number of transmitters and arrays to plan for. For example, if you need 7 transmitters, it may be as well to configure for 10 so that if there is expansion later, there will be less work.

General Information



This data must be obtained from the plant personnel to accurately reflect the specific configuration of your plant.

- Node Type: The Node Type may be selected using the drop-down menu as either HPM or APM. The selection will affect data entry validation for certain types of data.
- Unit: Unit is an entry for the LCN Unit ID and must meet LCN standards for Unit Identification.
- Base Tag Name: All default tagnames will have this entry as a prefix. Note that tagnames may be manually changed before the final database is generated.
- xPM Node #: This entry represents the LCN Node number of the xPM where the database for the XYR5000 SI-FTA will be loaded.
- xPM Network #: xPM Network is an entry that indicates the UCN Network number where the xPM resides.
- Number of Transmitters: This entry will size the array database to house this number of transmitters. This entry also affects the transmitters that may be selected for inclusion. This number should match or exceed the number of transmitters configured in the XYR 5000 Base Radio. Note that the larger this number becomes, the more array points are defined for addition to the system. **If the space is available, we recommend configuring now for 50 transmitters to remove the trouble of having to add database at a later date.** However, also recognize that there is a range of transmitters associated with each Serial Interface array. For example, if you have 6 transmitters, it may be well to configure for 10 at this time. See the table Table 2 - Transmitter vs. Array Requirements on page 2.

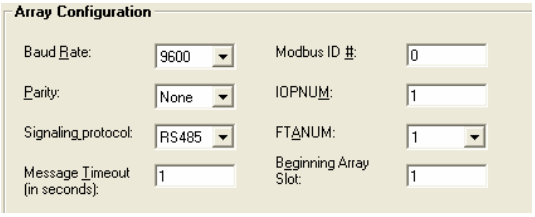
NOTE:If the database is set to accommodate (for example) 20 transmitters and the actual number of transmitters are currently 10, an additional 10 may be added with no impact to the system.

NOTE:If additional transmitters are added at a later date, a new SI array may be required (see Table 2 - Transmitter vs. Array Requirements), plus all the Flag Points, Numeric Points, RegPV Points, and/or CL that would be required to accommodate the alarming and scaling for these new transmitters. The Configurator Program can be used to build this database at later time by loading the last configuration (nominally in a file named XYRLoad.ini), making the changes to add the new transmitters, and generating a new set of database files. *The .EB files are set to NOT overwrite existing database*, but the existing points will be included in the database and will produce an error at load time. That error will

prevent the XYRLDOTH.EC file from recompiling the CL and from moving the resultant CL object files. However, that can be done manually.

NOTE:If transmitters are removed at a later date, simply change the number of configured transmitters on the Base Radio.

Array Configuration



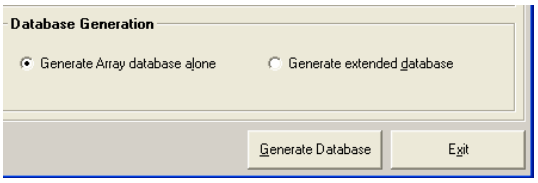
The array database must reflect certain information about the system and about the communication setup.

- Baud Rate: The Baud Rate or rate of communication must be determined and selected. Selections may be made from the drop-down menu.
- Parity: Using the drop-down menu, select Odd, Even, or None for the parity used in communication.
- Signaling Protocol: Using the drop-down menu, select RS485 or RS232. The default and standard for the XYR 5000 Base radio is RS485.
- Message Timeout: Enter here the communication timeout value for the Modbus communications. This represents the time (in seconds) before a failure is determined and retry will occur. The range is between 0.25 sec and 5.0 sec.
- Modbus ID #: This is the Modbus address of the XYR 5000 Base Radio.
- IOPNUM: This is the slot number the SI IOP is mounted in. The range is 1 - 40.
- FTANUM: The FTANUM defines whether the FTA is connected as the first or the second FTA. Note that FTA 1 is connected on the left side of the FTA's power supply. FTA 2 is connected on the right side of the FTA's power supply.
- Beginning Array Slot: The first slot for the array database must be defined. Note that the program presumes all slots are consecutive and are built as such. Manual changes to the .EB files may be made as required. Only the resultant file XYRBASE.EB will require modification in such a case.

History Module reference path

The History Module reference path is necessary to build the .EC files that will automate your database and CL building. Indicate here the pathname on the LCN where the .EB, .CL, and .EC files will be placed and executed. Note that the pathname must not end with a '>'.

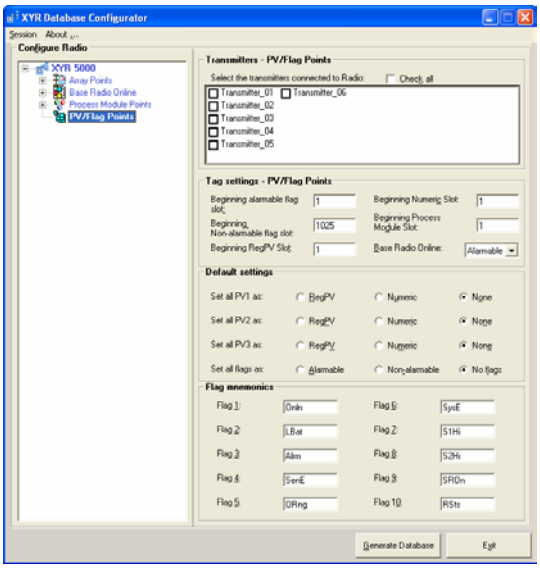
Database Generation



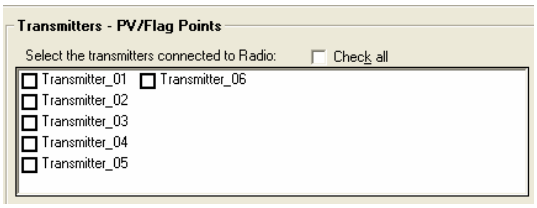
This radio button selection will determine the extent of the database to be built. If 'Generate Array database alone' is selected, only the array database and associated files are generated. When 'Generate extended database' is selected, all files for the CL, ProcMod points, Numeric points, Flag points, and RegPV points as defined with the configurator will be built.

The 'Generate Database' button may be selected to build the database once all configuration is defined. Note that a successful 'Array database' can be built at this point. For an 'Extended database', the user will want to define transmitters and points for data storage prior to generating the database.

To continue, select the 'PV/Flag Points' selection in the left pane.

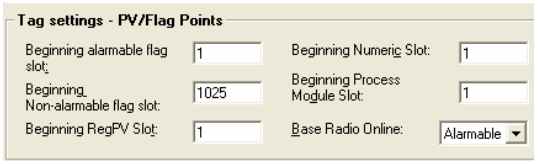


Transmitters – PV/Flag Points



The number of transmitters presented in this section is a direct result of the prior selection of 'Number of Transmitters'. The array database will be built to handle 6 transmitters. With this selection, the user will be allowed to define extended storage of PV and Flag data. Transmitters not selected here will not have the option of using the extended database. Select the transmitters as appropriate. Note that with each selection, a 'Transmitter_xx' will appear on the left pane of the Configurator.

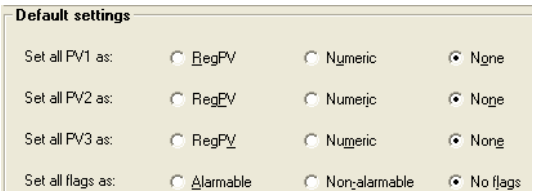
Tag Settings – PV/Flag Points



When an extended database is defined, a number of parameters must be indicated to know how to define the database properly.

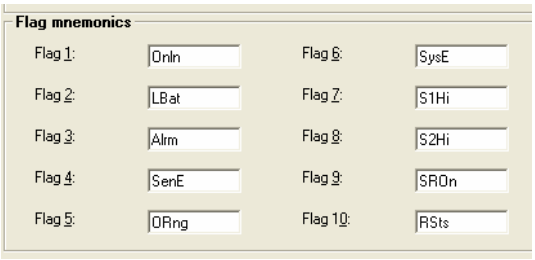
- Beginning alarmable flag slot: While the first alarmable flag slot is 1, it may not be the first 'available' flag slot. Define the first 'available' alarmable flag slot here. The slots are considered consecutive from this point. If this is not the case, the resultant .EB file for the flag points may be manually manipulated.
- Beginning Non-alarmable flag slot: There is a first 'non-alarmable' slot for flags that will depend on the use of an APM or an HPM. The program takes that into account. However, that slot may not be 'available'. Define the first 'available' non-alarmable flag slot here. The slots are considered consecutive from this point. If this is not the case, the resultant .EB file for the flag points may be manually manipulated.
- Beginning RegPV Slot: This is the first 'available' RegPV slot. The maximum number of RegPVs that will be required is seven (7). The actual number will depend upon your definition of how to treat data. Flag tags and Numeric tags affect this count.
- Beginning Numeric Slot: This will be the first 'available' Numeric slot on the xPM. The slots are considered consecutive from this point. If this is not the case, the resultant .EB file for the numeric (PV) points may be manually manipulated.
- Beginning Process Module slot: This should be the first 'available' ProcMod slot on the xPM. The slots are considered consecutive from this point. If this is not the case, the resultant .EB file for the ProcMod points may be manually manipulated.
- Base Radio Online: With this selection, a determination is made if the 'Base Radio Online' flag will be alarmable or not. If an extended database is configured, a flag for the base radio's online status will always be generated, along with a ProcMod and CL to process it.

Default Settings



Because up to 50 transmitters may be selected, there may be a very large database to configure. In order to help make this task simpler, if all the values of a certain type are expected to be either alarmable or stored into numeric points, this may be indicated at this time by selecting the appropriate indicator. If no 'extended' database will be built for a certain type, then leave the selection as 'None' or 'No flags'. That selection is the default. The PV/Flag settings for each transmitter may be later modified using the Configurator program.

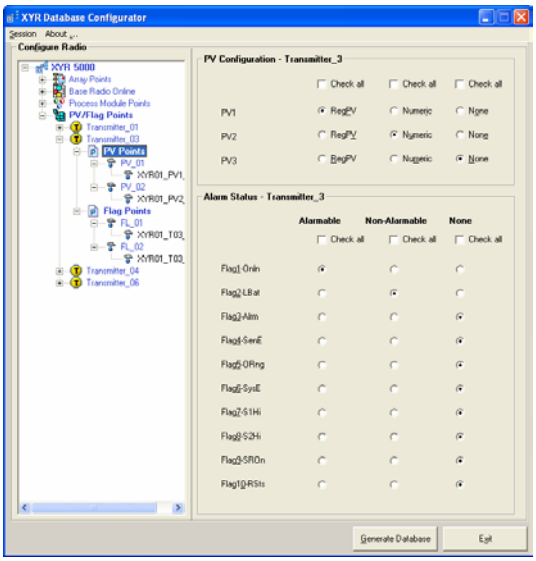
Flag mnemonics



Up to 10 flags may be created to provide a .PVFL for the status data on each transmitter. As a default, the 'Base Tagname' is combined with the a 'Txx' for the transmitter number and the mnemonics defined here as a tagname for the flags. The flags are as follows:

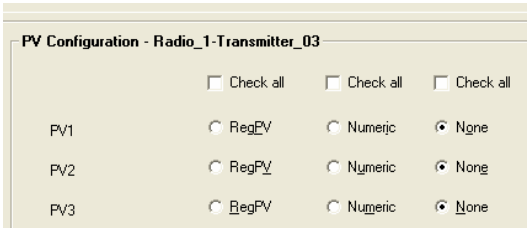
- Onln – Online / Offline Status of the transmitter
- LBat – Low Battery
- Alrm – In Alarm
- SenE – Sensor Error
- ORng – Overrange condition in effect
- SysE – System Error
- S1Hi – Switch 1 is High
- S2Hi – Switch 2 is High
- SROn – Square Root Function in effect
- RSts – Future use

The final set of selections is based on the configuration the individual transmitters.



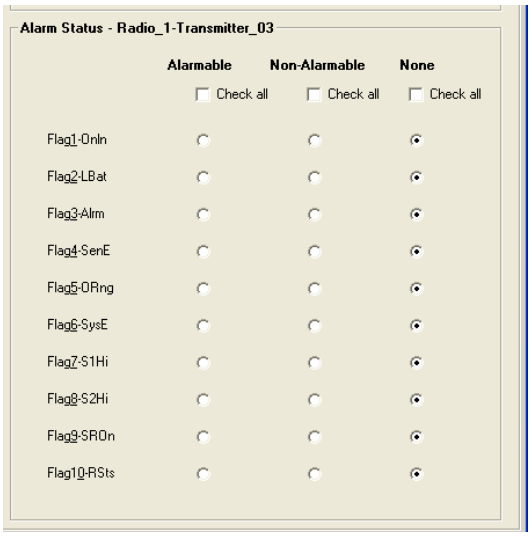
With this page, the user may select individual PVs and/or Flags for transfer to optional Flag, Numeric, or RegPV points. PVs selected as RegPV (provides alarming and limit checking) will have their array value moved to RegPV points. PVs selected as 'Numeric' will have their array value moved to Numeric points. Flags selected as 'Alarmable' will have their array value moved to Flag points with alarming capability. Flags selected as 'Non-Alarmable' will have their array value moved to Flag points without alarming capability (as per the index entered by the user).

PV Configuration – Radio_1-Transmitter_xx

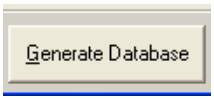


There are potentially 3 PVs which may be configured to be transferred to RegPV or Numeric points. It should be noted that not all transmitters utilize all PVs. To minimize the effective database created, unused PVx values should be selected as 'none'.

Alarm Status – Radio_1-Transmitter_xx

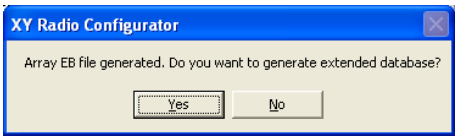


Up to 10 flags for each transmitter may have a value transferred from data received from the XYR 5000 Base Radio. That definition is made here. An extended database reflecting the choices made here will be made when the 'Generate Database' button is selected.



Once the configuration data is all entered, the user will select the 'Generate Database' button. This will cause the XYR Database Configurator to calculate and build the .EB files, the .CL files, and the .EC files for database and CL building.

When the files are being built, if the files already exist, the user will be asked to verify overstoring the existing files. The user will first be allowed to choose the location for the new files being built. Even if the selection on the first page was to generate only the 'Array database', once the first, required files are built, the user will be asked:



The extended database refers to the optional database that will be built for storing the data as indicated by the selections made with the XYR Database Configurator. This is the database that will provide Flag, Numeric, RegPV, and ProcMod points on the TPS system as desired for storage of the array data into more 'normal' PV type points.

Once the extended database is created, notification will occur and the current session will be saved.

The files created are as follows (showing the default point prefixes):

File Name	Contains
XYRLDARR.EC	Master .EC file used for Array database load
XYRDBARR.EC	.EC file used by XYRLDARR.EC for building and loading the Array database
XYRLDOTH.EC	Master .EC file used for non Array database load and .CL compile
XYRDBOTH.EC	.EC file used by XYRLDOTH.EC for compiling and loading the Non-Array database
XYRBase.EB	.EB file for the Array points
XYR011.CL (up to XYR017.CL)	.CL for the ProcMod point (if indicated)
XYRFlag.EB	.EB file with the Flag points
XYRLoad.ini	This is the default 'Save' file for the current/last session.
XYRPrcM.EB	.EB file with the ProcMod point
XYRPV.EB	.EB file with the RegPV and Numeric points

Table 9 - Files built by XYR Configurator

Examine at the .EB files created. The user will need to verify that these files contain the locations, settings, point names, etc. that are expected and make any changes that might be necessary. Any alarm limits must be manually entered. While the XYR Database Configurator is not an absolute foolproof process, it will do most if not all of the work in preparing the files you will need.

The files are ready to be copied to the LCN History Module. There are a number of methods for doing this. We recommend that the files be moved by plant engineering personnel with an understanding of the TPS HM structure and how to move files from a PC format to the LCN format. A typical method for moving the file would be to use the 'File Transfer' utility that is run on GUS stations.

From this point on, any errors are standard LCN Command Processor errors and can be investigated using standard TDC3000/TPS documentation.

To create the database on the LCN, several .EC files are provided – XYRLDARR.EC for the required Array Database and XYRLDOTH.EC for the optional data functions. From the Command Processor, having set the proper path (SP NET>xxxx>), type: EC XYRLDARR.EC <Enter> to build the array database. Similarly, for the extended database points and CL, type XYRLDOTH.EC <Enter> to build that portion of the database. The .EB files built by the Configurator will then be run through the Exception Build and Load process. If there are no errors, the .CL file will also be compiled for use with the ProcMod point. Once built, it copies itself into the proper path for the indicated UCN and xPM Node. It will be up to the user to connect the CL to the ProcMod point. See the TPS/TDC documentation about Process Module (ProcMod) points and their use in the Advanced Process Manager Control Functions and Algorithms (AP09-xxx).

It would be a good idea to do a save on the HPM data at this point to keep from having to reinitiate the database building effort.

TPS / XYR 5000 DIAGNOSTIC SCHEMATIC

A simple native window TPS Schematic is provided with the package to allow the plant personnel the ability to see which transmitters are connected and what the current PV values (PV1, PV2, and PV3) are.

There are two files on the CD which must be loaded onto the TPS History Module. Using the same method as used in transferring the database and CL files built by the XYR Database Configurator, copy the following files to the History Module:

- XYR_DIAG.DS
- XYRDDB.DF

The TPS graphic must be compiled on the target system to be useable. This can only be accomplished once the Array database has been successfully loaded sicne the graphic will access that database.

To modify and compile the TPS schematic, the following steps are provided:

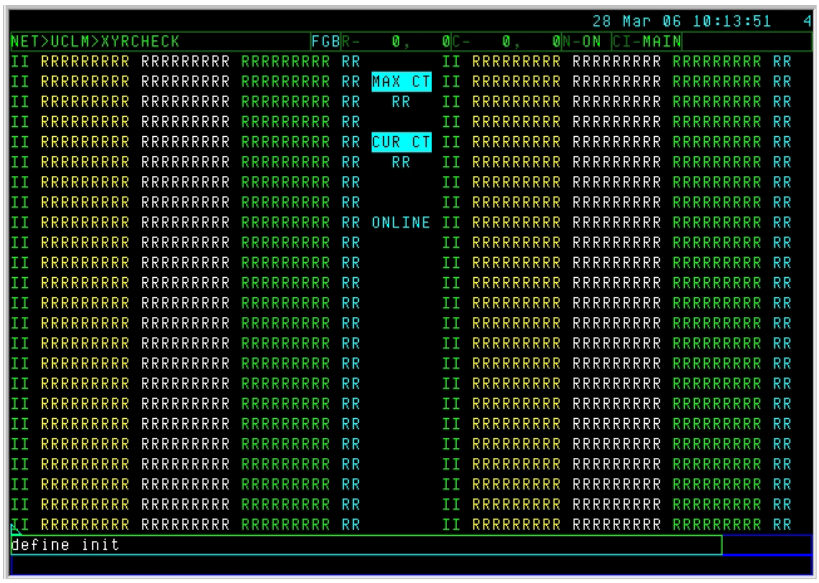
From an station loaded with ether the Engineering Personality or the Universal Personality, enter the Picture Editor.

Set the pathname to the volume where the .DS and .DF files were placed on the History Module (SP NET>xxx>).

Enter the command LOAD XYRDDB

Enter the command READ XYR_DIAG to read in the schematic in preparation for possible modification.

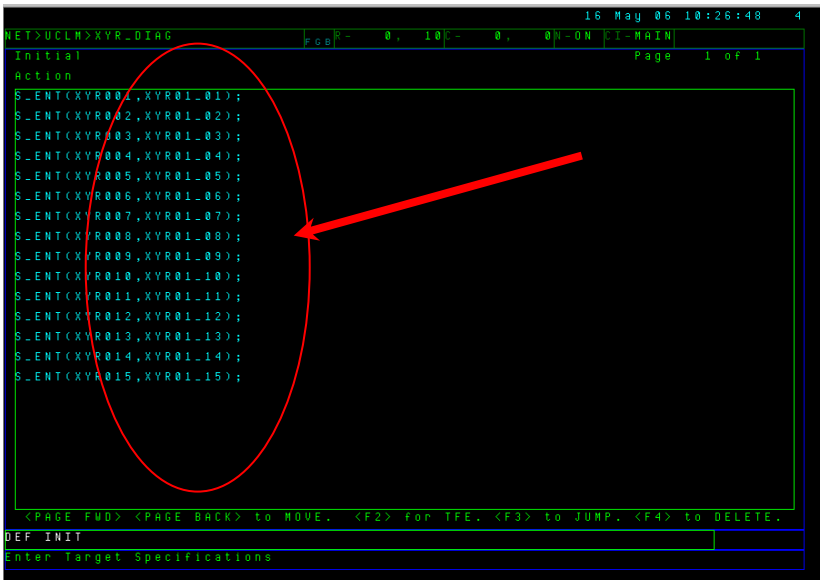
Enter the command DEFINE INIT



At this point, the user will see a number of point names (here shown as XYR01_01 through XYR01_15).

- The point names must match those array point names that were loaded onto the system.
- If point names other than the default set were used, these must be modified to match the actual point names.
- Select the point names and modify them to match.
- If an array has not been loaded, that line must be deleted or the schematic will not compile.

For example, if 5 or fewer transmitters are configured into the system, only the first four lines would be retained (see Table 2 - Transmitter vs. Array Requirements).



Compile the schematic (COM), ensuring it is available in a volume searched by the schematic request.

The completed schematic will show 'online' transmitters, the 3 PV values, the type of the transmitter, how many transmitters the base radio is configured for, and how many are responding. Note that the values and types represented within this document are simulated for display purposes only and do not reflect the actual types of numbers one may expect to see.

There are two messages that may appear on the graphic.

Database Incomplete: One of two things is happening here. One - the Base Radio may be configured to handle more transmitters than is the database on the TDC 3000. Two – the additional array database has been added, but the "DEFINE INIT" task in modifying the schematic has not been modified to include the new array.

Transmitter Not Configured: The array database has been sized to handle this transmitter, but the base radio is a number smaller than the number allowed by virtue of the database loaded. When the Base Radio is sized to that point, if a new transmitter is enabled, the PV values will be shown.

#	PV1	PV2	PV3	TYPE	#	PV1	PV2	PV3	TYPE
1	70.28	28.94	97.83	11	26	68.94	4.19	77.21	4
2	2.31	7.24	8.53	12	27	---	---	---	1
3	82.60	34.91	13.61	3	28	---	---	---	1
4	21.31	30.22	12.12	8	29	---	---	---	1
5	86.25	48.24	63.29	7	30	---	---	---	1
6	92.55	29.03	90.65	7	31	54.66	57.40	5.22	11
7	69.03	21.94	38.60	8	32	14.16	35.34	20.76	11
8	25.92	87.22	53.63	7	33	58.97	74.00	29.26	5
9	---	---	---	1	34	58.97	32.00	50.08	1
10	18.19	59.05	4.72	4	35	---	---	---	1
11	---	---	---	1	36	21.61	38.11	62.07	7
12	---	---	---	1	37	---	---	---	1
13	88.21	24.82	36.13	5	38	67.51	89.51	53.16	6
14	16.24	67.56	96.20	10	39	21.56	23.91	53.97	5
15	---	---	---	1	40	---	---	---	1
16	87.71	2.48	55.95	4	41	6.36	69.76	78.14	6
17	42.68	89.20	84.74	3	42	---	---	---	1
18	---	---	---	1	43	---	---	---	1
19	22.72	52.16	49.08	11	44	61.31	84.49	76.50	10
20	---	---	---	1	45	45.13	74.59	25.31	5
21	---	---	---	1	46	---	---	---	1
22	---	---	---	1	47	65.55	10.76	87.04	5
23	---	---	---	1	48	11.69	36.21	37.76	2
24	98.43	91.29	76.68	7	49	10.19	10.29	50.56	4
25	23.05	7.90	99.19	6	50	---	---	---	1

SAMPLE DATABASES AND CL

These databases and CL examples are intended as a sample of the both the base required Array database and the Extended database. Point names, Unit names, slot numbers, scaling, and other defineable parameters would need to be adjusted according to plant requirements.

It should be noted that changes to a point name must be reflected in the following databases as well:

TAG TYPE	ALSO CHECK
Array	xPM CL code; the DEF INIT page on the XYR_DIAG schematic
Flag	xPM CL Code
Numeric	xPM CL Code
RegPV	Changing the RegPV Tag name should have no impact on other databases or on the XYR_DIAG schematic.
ProcMod	Changing the ProcMod tag name will require a change in the non-generic xPM CL that will be attached to that tag.

Table 10 - Checks for Manual Point Name Changes

SAMPLE xPM ARRAY DATABASE

The following table provides a nominal .EB file for all fifteen (15) base array points. The first four (4) arrays are required in any configuration. These data in these files may be used for building the arrays manually. Once the first four (4) arrays are built, the XYR SI-FTA should be able to communicate with the XYR 5000 Base Radio. Other arrays may be built as required (reference Table 2 - Transmitter vs. Array Requirements).

The first four (4) arrays have cells highlighted in yellow where the user would normally modify the contents to fit the specific requirements at the user's site. While other data may be modified, these are the most common.

Note that in the first four (4) arrays, there are also cells highlighted in green. These contents must not be modified.

{SYSTEM ENTITY X_ARR01( )}
&T ARRAY
&N X_ARR01
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_ActionFlags"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 1
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_FL
IOPNUM = 1
FTANUM = 1
DEVADDR = 15
SCANPRI = LOW
AUXDATA1 = 15
AB_DATA1 = --------
AUXDATA2 = 1
AB_DATA2 = 0.5
AUXDATA3 = 485.0
AB_DATA3 = 0
AUXDATA4 = 9600.0
AB_DATA4 = 1
FLSTIX = 333
NFLAG = 151
NNSTIX = 0
NNUMERIC = 0
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR02( )}
&T ARRAY
&N X_ARR02
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_DeviceType"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 2
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_NN
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 11
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 0
NFLAG = 0
NNSTIX = 999
NNUMERIC = 27
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR03( )}
&T ARRAY
&N X_ARR03
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_StatusFlags"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 3
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_FL
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 13
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 484
NFLAG = 250
NNSTIX = 0
NNUMERIC = 0
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR04( )}
&T ARRAY
&N X_ARR04
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_PVVal"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 4
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_NN
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 1
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 0
NFLAG = 0
NNSTIX = 1026
NNUMERIC = 15
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR05( )}
&T ARRAY
&N X_ARR05
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_PVVal"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 5
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_NN
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 2
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 0
NFLAG = 0
NNSTIX = 1041
NNUMERIC = 15
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR06( )}
&T ARRAY
&N X_ARR06
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_PVVal"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 6
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_NN
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 3
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 0
NFLAG = 0
NNSTIX = 1056
NNUMERIC = 15
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR07( )}
&T ARRAY
&N X_ARR07
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_PVVal"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 7
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_NN
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 4
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 0
NFLAG = 0
NNSTIX = 1071
NNUMERIC = 15
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR08( )}
&T ARRAY
&N X_ARR08
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_PVVal"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 8
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_NN
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 5
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 0
NFLAG = 0
NNSTIX = 1086
NNUMERIC = 15
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR09( )}
&T ARRAY
&N X_ARR09
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_DeviceType"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 9
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_NN
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 12
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 0
NFLAG = 0
NNSTIX = 1101
NNUMERIC = 25
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR10( )}
&T ARRAY
&N X_ARR10
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_StatusFlags"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 10
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_FL
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 14
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 734
NFLAG = 250
NNSTIX = 0
NNUMERIC = 0
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR11( )}
&T ARRAY
&N X_ARR11
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_PVVal"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 11
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_NN
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 6
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 0
NFLAG = 0
NNSTIX = 1126
NNUMERIC = 15
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR12( )}
&T ARRAY
&N X_ARR12
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_PVVal"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 12
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_NN
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 7
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 0
NFLAG = 0
NNSTIX = 1141
NNUMERIC = 15
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR13( )}
&T ARRAY
&N X_ARR13
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_PVVal"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 13
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_NN
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 8
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 0
NFLAG = 0
NNSTIX = 1156
NNUMERIC = 15
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR14( )}
&T ARRAY
&N X_ARR14
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_PVVal"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 14
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_NN
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 9
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 0
NFLAG = 0
NNSTIX = 1171
NNUMERIC = 15
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

{SYSTEM ENTITY X_ARR15( )}
&T ARRAY
&N X_ARR15
NODETYP = HPM
PNTFORM = FULL
PTDESC = "ARRAY_PVVal"
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = a1
NTWKNUM = 1
NODENUM = 1
MODNUM = 0
SLOTNUM = 15
PRIMMOD = _____
USERID = "----------"
EXTDATA = IO_NN
IOPNUM = 1
FTANUM = 1
DEVADDR = 0
SCANPRI = LOW
AUXDATA1 = 10
AB_DATA1 = --------
AUXDATA2 = --------
AB_DATA2 = --------
AUXDATA3 = --------
AB_DATA3 = --------
AUXDATA4 = --------
AB_DATA4 = --------
FLSTIX = 0
NFLAG = 0
NNSTIX = 1186
NNUMERIC = 15
STRSTIX = 0
STRLEN = 8
NSTRING = 0
TIMESTIX = 0
NTIME = 0
SPLOCK = OPERATOR
FLDESC = " "
NNDESC = " "
STRDESC = " "
TIMEDESC = " "
$ADD = ON

SAMPLE xPM ALARMABLE FLAG POINT

Sample xPM Alarm Flag Point
{SYSTEM ENTITY XYR_T01_Onln( )}
&T FLAGNIM
&N XYR_T01_Onln
NODETYP = APM
PNTFORM = FULL
PTDESC = "Transmitter Online"
EUDESC = " "
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = B1
NTWKNUM = 1
NODENUM = 9
SLOTNUM = 81
PRIMMOD = _____
STATETXT(1) = "OFF "
STATETXT(0) = "ON "
PV = OFF
BOXCLR(1) = YELLOW
BOXCLR(0) = GREEN
$AUXUNIT = --
OFFNRMPR = LOW
ALENBST = ENABLE
EIPPCODE = _____

SAMPLE xPM NON-ALARMABLE FLAG POINT

Sample xPM Non-Alarmable Flag Point
{SYSTEM ENTITY XYR_T01_Onln( )}
&T FLAGNIM
&N XYR_T01_Onln
NODETYP = APM
PNTFORM = FULL
PTDESC = "Transmitter Online"
EUDESC = " "
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = B1
NTWKNUM = 1
NODENUM = 9
SLOTNUM = 601
PRIMMOD = _____
STATETXT(1) = "OFF "
STATETXT(0) = "ON "
PV = OFF
BOXCLR(1) = YELLOW
BOXCLR(0) = GREEN

SAMPLE xPM NUMERIC POINT

Sample xPM Numeric Point
{SYSTEM ENTITY XYR_PV2_T26( )}
&T NUMERNIM
&N XYR_PV2_T26
NODETYP = APM
PNTFORM = FULL
PTDESC = "Numeric_XYR_PV2_T26"
EUDESC = " "
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = B1
NTWKNUM = 1
NODENUM = 9
SLOTNUM = 26
PRIMMOD = _____
PV = 0.0
PVFORMAT = D1

SAMPLE xPM REGPV POINT

Sample xPM RegPV Point
{SYSTEM ENTITY XYR_PV1_T01( )}
&T REGPVNIM
&N XYR_PV1_T01
NODETYP = APM
PNTFORM = FULL
PTDESC = "RegPV_XYR_PV1_T01"
EUDESC = " "
KEYWORD = " "
ASSOCDSP = " "
$CDETAIL = " "
UNIT = B1
NTWKNUM = 1
NODENUM = 9
MODNUM = 0
SLOTNUM = 1
PRIMMOD = _____
USERID = "----------"
PVALGID = DATAACQ
PVEUHI = 100.0000
PVEULO = 0.000000
PVFORMAT = D1
PVEXEUHI = 102.90000
PVEXEULO = -2.90000
PVCLAMP = NOCLAMP
PVSRCOPT = ONLYAUTO
TF = 0.000000
PVTV = --------
OVERVAL = 25
PISRC(1) = XYR_ARR01.NN(1)
$AUXUNIT = --
$ALDLOPT = NONE
DLYTIME = 0
PVALDB = ONE
PVHITP = --------
PVLOTP = --------
PVROCPTP = --------
PVROCNTP = --------
BADPVPR = LOW
ALENBST = ENABLE

SAMPLE xPM PROCMOD POINT

Sample xPM ProcMod Point
{SYSTEM ENTITY XYR_DataXFR1( )}
&T PRMODNIM
&N XYR_DataXFR1
NODETYP = APM
PNTFORM = FULL
PTDESC = "XYR Process Module1"
ASSOCDSP = " "
$CDETAIL = " "
UNIT = B1
NTWKNUM = 1
NODENUM = 9
SLOTNUM = 2
PRIMMOD = _____
USERID = "----------"
STRLEN = 8
SEQSLTSZ = 100
CNTLLOCK = OPERATOR
SPLOCK = OPERATOR
RSTROPT = OFF
ACP = ____
CLBACK = 0
SEQPR = LOW

SAMPLE xPM CL

Sample xPM CL
SEQUENCE XYR1(APM ; POINT XYR_DataXFR1)
EXTERNAL XYR_DataXFR2
EXTERNAL XYR_ARR01
EXTERNAL XYR_ARR02
EXTERNAL XYR_ARR03
EXTERNAL XYR_ARR04
EXTERNAL XYR_ARR05
EXTERNAL XYR_ARR06
EXTERNAL XYR_ARR07
EXTERNAL XYR_ARR08
EXTERNAL XYR_ARR09
EXTERNAL XYR_ARR10
EXTERNAL XYR_ARR11
EXTERNAL XYR_ARR12
EXTERNAL XYR_ARR13
EXTERNAL XYR_ARR14
EXTERNAL XYR_ARR15
EXTERNAL XYR_PV2_T01
EXTERNAL XYR_T01_Onln
EXTERNAL XYR_T01_LBat
EXTERNAL XYR_T01_Alrm
EXTERNAL XYR_T01_SysE
EXTERNAL XYR_T01_ORng
EXTERNAL XYR_T01_SenE
EXTERNAL XYR_T01_S2Lo
EXTERNAL XYR_T01_S2Hi
EXTERNAL XYR_T01_SROn
EXTERNAL XYR_T01_RSts
EXTERNAL XYR_PV2_T02
EXTERNAL XYR_T02_Onln
EXTERNAL XYR_T02_LBat
EXTERNAL XYR_T02_Alrm
EXTERNAL XYR_T02_SysE
EXTERNAL XYR_T02_ORng
EXTERNAL XYR_T02_SenE
EXTERNAL XYR_T02_S2Lo
EXTERNAL XYR_T02_S2Hi
EXTERNAL XYR_T02_SROn
EXTERNAL XYR_T02_RSts
EXTERNAL XYR_PV2_T03
EXTERNAL XYR_T03_Onln

Sample xPM CL
EXTERNAL XYR_T03_LBat
EXTERNAL XYR_T03_Alrm
EXTERNAL XYR_T03_SysE
EXTERNAL XYR_T03_ORng
EXTERNAL XYR_T03_SenE
EXTERNAL XYR_T03_S2Lo
EXTERNAL XYR_T03_S2Hi
EXTERNAL XYR_T03_SROn
EXTERNAL XYR_T03_RSts
EXTERNAL XYR_PV2_T04
EXTERNAL XYR_T04_Onln
EXTERNAL XYR_T04_LBat
EXTERNAL XYR_T04_Alrm
EXTERNAL XYR_T04_SysE
EXTERNAL XYR_T04_ORng
EXTERNAL XYR_T04_SenE
EXTERNAL XYR_T04_S2Lo
EXTERNAL XYR_T04_S2Hi
EXTERNAL XYR_T04_SROn
EXTERNAL XYR_T04_RSts
EXTERNAL XYR_PV2_T05
EXTERNAL XYR_T05_Onln
EXTERNAL XYR_T05_LBat
EXTERNAL XYR_T05_Alrm
EXTERNAL XYR_T05_SysE
EXTERNAL XYR_T05_ORng
EXTERNAL XYR_T05_SenE
EXTERNAL XYR_T05_S2Lo
EXTERNAL XYR_T05_S2Hi
EXTERNAL XYR_T05_SROn
EXTERNAL XYR_T05_RSts
EXTERNAL XYR_PV2_T06
EXTERNAL XYR_T06_Onln
EXTERNAL XYR_T06_LBat
EXTERNAL XYR_T06_Alrm
EXTERNAL XYR_T06_SysE
EXTERNAL XYR_T06_ORng
EXTERNAL XYR_T06_SenE
EXTERNAL XYR_T06_S2Lo
EXTERNAL XYR_T06_S2Hi
EXTERNAL XYR_T06_SROn
EXTERNAL XYR_T06_RSts
EXTERNAL XYR_PV2_T07

Sample xPM CL
EXTERNAL XYR_T07_Onln
EXTERNAL XYR_T07_LBat
EXTERNAL XYR_T07_Alrm
EXTERNAL XYR_T07_SysE
EXTERNAL XYR_T07_ORng
EXTERNAL XYR_T07_SenE
EXTERNAL XYR_T07_S2Lo
EXTERNAL XYR_T07_S2Hi
EXTERNAL XYR_T07_SROn
EXTERNAL XYR_T07_RSts
EXTERNAL XYR_PV2_T08
EXTERNAL XYR_T08_Onln
EXTERNAL XYR_T08_LBat
EXTERNAL XYR_T08_Alrm
EXTERNAL XYR_T08_SysE
EXTERNAL XYR_T08_ORng
EXTERNAL XYR_T08_SenE
EXTERNAL XYR_T08_S2Lo
EXTERNAL XYR_T08_S2Hi
EXTERNAL XYR_T08_SROn
EXTERNAL XYR_T08_RSts
PHASE START
SET NN(1) = 0
SET NN(2) = 0
SET XYR_PV2_T01.PV = XYR_ARR04.nn(3) (WHEN ERROR call err_set(1))
SET XYR_T01_Onln.PVFL = not(XYR_ARR13.FL(1) (WHEN ERROR call err_set(2)))
SET XYR_T01_LBat.PVFL = XYR_ARR13.FL(51) (WHEN ERROR call err_set(3))
SET XYR_T01_Alrm.PVFL = XYR_ARR13.FL(101) (WHEN ERROR call err_set(4))
SET XYR_T01_SysE.PVFL = XYR_ARR13.FL(151) (WHEN ERROR call err_set(5))
SET XYR_T01_ORng.PVFL = XYR_ARR13.FL(201) (WHEN ERROR call err_set(6))
SET XYR_T01_SenE.PVFL = XYR_ARR14.FL(1) (WHEN ERROR call err_set(7))
SET XYR_T01_S2Lo.PVFL = XYR_ARR14.FL(51) (WHEN ERROR call err_set(8))
SET XYR_T01_S2Hi.PVFL = XYR_ARR14.FL(101) (WHEN ERROR call err_set(9))
SET XYR_T01_SROn.PVFL = XYR_ARR14.FL(151) (WHEN ERROR call err_set(10))
SET XYR_T01_RSts.PVFL = XYR_ARR14.FL(201) (WHEN ERROR call err_set(11))
SET XYR_PV2_T02.PV = XYR_ARR04.nn(4) (WHEN ERROR call err_set(12))
SET XYR_T02_Onln.PVFL = not(XYR_ARR13.FL(2) (WHEN ERROR call err_set(13)))
SET XYR_T02_LBat.PVFL = XYR_ARR13.FL(52) (WHEN ERROR call err_set(14))
SET XYR_T02_Alrm.PVFL = XYR_ARR13.FL(102) (WHEN ERROR call err_set(15))
SET XYR_T02_SysE.PVFL = XYR_ARR13.FL(152) (WHEN ERROR call err_set(16))
SET XYR_T02_ORng.PVFL = XYR_ARR13.FL(202) (WHEN ERROR call err_set(17))
SET XYR_T02_SenE.PVFL = XYR_ARR14.FL(2) (WHEN ERROR call err_set(18))
SET XYR_T02_S2Lo.PVFL = XYR_ARR14.FL(52) (WHEN ERROR call err_set(19))

Sample xPM CL
SET XYR_T02_S2Hi.PVFL = XYR_ARR14.FL(102) (WHEN ERROR call err_set(20))
SET XYR_T02_SROn.PVFL = XYR_ARR14.FL(152) (WHEN ERROR call err_set(21))
SET XYR_T02_RSts.PVFL = XYR_ARR14.FL(202) (WHEN ERROR call err_set(22))
SET XYR_PV2_T03.PV = XYR_ARR04.nn(5) (WHEN ERROR call err_set(23))
SET XYR_T03_Onln.PVFL = not(XYR_ARR13.FL(3) (WHEN ERROR call err_set(24)))
SET XYR_T03_LBat.PVFL = XYR_ARR13.FL(53) (WHEN ERROR call err_set(25))
SET XYR_T03_Alrm.PVFL = XYR_ARR13.FL(103) (WHEN ERROR call err_set(26))
SET XYR_T03_SysE.PVFL = XYR_ARR13.FL(153) (WHEN ERROR call err_set(27))
SET XYR_T03_ORng.PVFL = XYR_ARR13.FL(203) (WHEN ERROR call err_set(28))
SET XYR_T03_SenE.PVFL = XYR_ARR14.FL(3) (WHEN ERROR call err_set(29))
SET XYR_T03_S2Lo.PVFL = XYR_ARR14.FL(53) (WHEN ERROR call err_set(30))
SET XYR_T03_S2Hi.PVFL = XYR_ARR14.FL(103) (WHEN ERROR call err_set(31))
SET XYR_T03_SROn.PVFL = XYR_ARR14.FL(153) (WHEN ERROR call err_set(32))
SET XYR_T03_RSts.PVFL = XYR_ARR14.FL(203) (WHEN ERROR call err_set(33))
SET XYR_PV2_T04.PV = XYR_ARR04.nn(6) (WHEN ERROR call err_set(34))
SET XYR_T04_Onln.PVFL = not(XYR_ARR13.FL(4) (WHEN ERROR call err_set(35)))
SET XYR_T04_LBat.PVFL = XYR_ARR13.FL(54) (WHEN ERROR call err_set(36))
SET XYR_T04_Alrm.PVFL = XYR_ARR13.FL(104) (WHEN ERROR call err_set(37))
SET XYR_T04_SysE.PVFL = XYR_ARR13.FL(154) (WHEN ERROR call err_set(38))
SET XYR_T04_ORng.PVFL = XYR_ARR13.FL(204) (WHEN ERROR call err_set(39))
SET XYR_T04_SenE.PVFL = XYR_ARR14.FL(4) (WHEN ERROR call err_set(40))
SET XYR_T04_S2Lo.PVFL = XYR_ARR14.FL(54) (WHEN ERROR call err_set(41))
SET XYR_T04_S2Hi.PVFL = XYR_ARR14.FL(104) (WHEN ERROR call err_set(42))
SET XYR_T04_SROn.PVFL = XYR_ARR14.FL(154) (WHEN ERROR call err_set(43))
SET XYR_T04_RSts.PVFL = XYR_ARR14.FL(204) (WHEN ERROR call err_set(44))
SET XYR_PV2_T05.PV = XYR_ARR04.nn(7) (WHEN ERROR call err_set(45))
SET XYR_T05_Onln.PVFL = not(XYR_ARR13.FL(5) (WHEN ERROR call err_set(46)))
SET XYR_T05_LBat.PVFL = XYR_ARR13.FL(55) (WHEN ERROR call err_set(47))
SET XYR_T05_Alrm.PVFL = XYR_ARR13.FL(105) (WHEN ERROR call err_set(48))
SET XYR_T05_SysE.PVFL = XYR_ARR13.FL(155) (WHEN ERROR call err_set(49))
SET XYR_T05_ORng.PVFL = XYR_ARR13.FL(205) (WHEN ERROR call err_set(50))
SET XYR_T05_SenE.PVFL = XYR_ARR14.FL(5) (WHEN ERROR call err_set(51))
SET XYR_T05_S2Lo.PVFL = XYR_ARR14.FL(55) (WHEN ERROR call err_set(52))
SET XYR_T05_S2Hi.PVFL = XYR_ARR14.FL(105) (WHEN ERROR call err_set(53))
SET XYR_T05_SROn.PVFL = XYR_ARR14.FL(155) (WHEN ERROR call err_set(54))
SET XYR_T05_RSts.PVFL = XYR_ARR14.FL(205) (WHEN ERROR call err_set(55))
SET XYR_PV2_T06.PV = XYR_ARR04.nn(8) (WHEN ERROR call err_set(56))
SET XYR_T06_Onln.PVFL = not(XYR_ARR13.FL(6) (WHEN ERROR call err_set(57)))
SET XYR_T06_LBat.PVFL = XYR_ARR13.FL(56) (WHEN ERROR call err_set(58))
SET XYR_T06_Alrm.PVFL = XYR_ARR13.FL(106) (WHEN ERROR call err_set(59))
SET XYR_T06_SysE.PVFL = XYR_ARR13.FL(156) (WHEN ERROR call err_set(60))
SET XYR_T06_ORng.PVFL = XYR_ARR13.FL(206) (WHEN ERROR call err_set(61))
SET XYR_T06_SenE.PVFL = XYR_ARR14.FL(6) (WHEN ERROR call err_set(62))

Sample xPM CL
SET XYR_T06_S2Lo.PVFL = XYR_ARR14.FL(56) (WHEN ERROR call err_set(63))
SET XYR_T06_S2Hi.PVFL = XYR_ARR14.FL(106) (WHEN ERROR call err_set(64))
SET XYR_T06_SROn.PVFL = XYR_ARR14.FL(156) (WHEN ERROR call err_set(65))
SET XYR_T06_RSts.PVFL = XYR_ARR14.FL(206) (WHEN ERROR call err_set(66))
SET XYR_PV2_T07.PV = XYR_ARR04.nn(9) (WHEN ERROR call err_set(67))
SET XYR_T07_Onln.PVFL = not(XYR_ARR13.FL(7) (WHEN ERROR call err_set(68)))
SET XYR_T07_LBat.PVFL = XYR_ARR13.FL(57) (WHEN ERROR call err_set(69))
SET XYR_T07_Alrm.PVFL = XYR_ARR13.FL(107) (WHEN ERROR call err_set(70))
SET XYR_T07_SysE.PVFL = XYR_ARR13.FL(157) (WHEN ERROR call err_set(71))
SET XYR_T07_ORng.PVFL = XYR_ARR13.FL(207) (WHEN ERROR call err_set(72))
SET XYR_T07_SenE.PVFL = XYR_ARR14.FL(7) (WHEN ERROR call err_set(73))
SET XYR_T07_S2Lo.PVFL = XYR_ARR14.FL(57) (WHEN ERROR call err_set(74))
SET XYR_T07_S2Hi.PVFL = XYR_ARR14.FL(107) (WHEN ERROR call err_set(75))
SET XYR_T07_SROn.PVFL = XYR_ARR14.FL(157) (WHEN ERROR call err_set(76))
SET XYR_T07_RSts.PVFL = XYR_ARR14.FL(207) (WHEN ERROR call err_set(77))
SET XYR_PV2_T08.PV = XYR_ARR04.nn(10) (WHEN ERROR call err_set(78))
SET XYR_T08_Onln.PVFL = not(XYR_ARR13.FL(8) (WHEN ERROR call err_set(79)))
SET XYR_T08_LBat.PVFL = XYR_ARR13.FL(58) (WHEN ERROR call err_set(80))
SET XYR_T08_Alrm.PVFL = XYR_ARR13.FL(108) (WHEN ERROR call err_set(81))
SET XYR_T08_SysE.PVFL = XYR_ARR13.FL(158) (WHEN ERROR call err_set(82))
SET XYR_T08_ORng.PVFL = XYR_ARR13.FL(208) (WHEN ERROR call err_set(83))
SET XYR_T08_SenE.PVFL = XYR_ARR14.FL(8) (WHEN ERROR call err_set(84))
SET XYR_T08_S2Lo.PVFL = XYR_ARR14.FL(58) (WHEN ERROR call err_set(85))
SET XYR_T08_S2Hi.PVFL = XYR_ARR14.FL(108) (WHEN ERROR call err_set(86))
SET XYR_T08_SROn.PVFL = XYR_ARR14.FL(158) (WHEN ERROR call err_set(87))
SET XYR_T08_RSts.PVFL = XYR_ARR14.FL(208) (WHEN ERROR call err_set(88))
SET NN(3) = 0
SET XYR_DataXFR2.NN(3) = 1
WAIT NN(3) = 1
GOTO PHASE START
END XYR1
SUBROUTINE err_set(errline: in number)
SET NN(1) = NN(1) + 1
SET NN(2) = errline
END err_set

DISPLAY DATABASE FILE

```
{ HONEYWELL DEVELOPER CONTROLLED DDB}
{                                    }
{ Note: This is the XYR Platform specific DDB data tags used for all    }
{       schematic development pertaining to the XYR Platform. It is     }
{       used to avoid conflicts with any user developed schematics.     }
{       We have been assigned these specific indices and can not use    }
{       others without approval.                                        }
{                                    }
{                                    }
DDB = HONEYWELL;

{ GLOBAL DDB VARIABLES }

{ ENTITIES: }
XYR001:ENTITY,3751,GLOBAL;      {CONVERSION ARRAY + BASE ONLINE FLAG}
XYR002:ENTITY,3752,GLOBAL;      {TYPES FOR TRANS 1-25 + #TRANS + # RESP}
XYR003:ENTITY,3753,GLOBAL;      {STATUS FLAGS FOR TRANS 1-25}
XYR004:ENTITY,3754,GLOBAL;      {PV1/2/3 FOR TRANS 1-5}
XYR005:ENTITY,3755,GLOBAL;      {PV1/2/3 FOR TRANS 6-10}
XYR006:ENTITY,3756,GLOBAL;      {PV1/2/3 FOR TRANS 11-15}
XYR007:ENTITY,3757,GLOBAL;      {PV1/2/3 FOR TRANS 16-20}
XYR008:ENTITY,3758,GLOBAL;      {PV1/2/3 FOR TRANS 21-25}
XYR009:ENTITY,3759,GLOBAL;      {TYPES FOR TRANS 26-50}
XYR010:ENTITY,3760,GLOBAL;      {STATUS FLAGS FOR TRANS 26-50}
XYR011:ENTITY,3761,GLOBAL;      {PV1/2/3 FOR TRANS 26-30}
XYR012:ENTITY,3762,GLOBAL;      {PV1/2/3 FOR TRANS 31-35}
XYR013:ENTITY,3763,GLOBAL;      {PV1/2/3 FOR TRANS 36-40}
XYR014:ENTITY,3764,GLOBAL;      {PV1/2/3 FOR TRANS 41-45}
XYR015:ENTITY,3765,GLOBAL;      {PV1/2/3 FOR TRANS 46-50}
```

PRE-INSTALLATION CHECKLIST

This checklist is intended to ensure that the user has the necessary information to fully install the XYR SI-FTA solution. Items 1-18 must be identified for all installations. They are the minimum values required just to get the values from the Base Radio into the SI array points. Items 19-35 must be addressed for 'extended database' installations where PV/PVFL storage, alarming, and/or scaling of values is required.

Item	Description	Check and Entries	Additional Information
1	Is a GUS with File Transfer installed available	Yes / No	If not, all files will have to be built manually on the TDC3000. The Configurator can still build the files, but there is no utility for transferring the files to the HM.
2	APM or HPM on available	Yes / No	The SI-FTA will only work on a TDC3000 system that has an APM or an HPM.
3	Available Serial Interface IOP (SI-IOP) or room for new SI-IOP.	Yes / No	The FTA will connect via cable to the hardware backplane where the SI-IOP is connected.
4	Available plug-in to power supply for additional FTA or a new FTA available	Yes / No	The SI-FTA for XYR 5000 can be either FTA 1 or FTA 2. A power supply is required. If one is available, it must have an available plug for the new FTA.
5	Adequate Serial Interface (SI) Array Points	Yes / No	Ensure there are enough spare SI Array points for the transmitters being connected. Go to the xPM Slot Summary to physically verify the numbers available. To handle between one (1) and five (5) transmitters, the minimum number of arrays required is four (4). The maximum number of arrays required (handling a full complement of 50 wireless transmitters) is fifteen (15). See Table 2 - Transmitter vs. Array Requirements on page 2.
6	UCN Network		This is required for database building.
7	xPM Node Number		This is required for database building.
8	Unit ID		This is required for database building.
9	# Transmitters to be configured into Base Radio		This is required for database building. You may wish to refer to the table "Table 2 - Transmitter vs. Array Requirements" on page 2 to determine if you want to implement the maximum for the number of arrays you will build. For example, if you have 6 transmitters, it may be as well to build for 10 transmitters since the number of arrays required will handle up to 10 transmitters.
10	Communication BAUD		This is required for database building.

Item	Description	Check and Entries	Additional Information
	rate		
11	Communication Parity		This is required for database building.
12	Signaling Protocol		RS485 or RS232
13	Modbus Message Timeout		This is a value between 0.5 and 5.0 seconds. This is the time after which the XYR SI-FTA (acting as a Modbus Master) will declare a no-response to commands made from it to the Base Radio.
14	Base Radio Modbus Device ID		This is required for database building. This is the actual Modbus device number for the Base Radio.
15	IOP number where SI-IOP is installed		This is required for database building. This is the IOPNUM in TDC3000 terms. It is the physical hardware address where the IOP is installed.
16	FTA Number		This will be a 1 or a 2.
17	Beginning free Array slot.		Go to the xPM Slot Summary to physically verify the numbers available. This is required for database building. The XYR Configurator program presumes there are consecutive arrays when it builds .EB files. The .EB files may be manually adjusted later if the slots are not sequential.
18	History Module path for data file storage		This should be the pathname where the files resulting from running the XYR Configurator will be placed. These include .EB, .EC, and .CL files.
	FROM THIS POINT ON, YOU ARE GATHERING DATA FOR THE EXTENDED DATABASE		**With the information gathered to this point, the SI Array points can be built. The Base Radio and SI-FTA can function with just the array points being built. If you have a requirement for alarming, scaling, or simply having PV or PVFL type values, the rest of the checklist must be populated.**
19	How many values require a PV?		There are up to 3 values per transmitter. Most will have 1 or 2 values. Of those, determine which transmitter values will require being placed into a ".PV" type point. **Do not include the 'flag' or 'status' type values at this point.**
20	Of those, how many require alarming and/or scaling?		There are two types of points that transmitter values can be placed into. Numeric points are storage locations only, but do provide a ".PV". For alarming, scaling, and other functions one must utilize RegPV points. This should be the number of RegPV points required. Note that there are a limited number of RegPV slots per xPM (see Table 5 - XYR Solution Point Types).
21	Number of available	Yes / No	Go to the xPM Slot Summary to physically verify the

Item	Description	Check and Entries	Additional Information
	RegPV points available		numbers available. Do you have enough for those required per the prior checklist item?
22	Number of Numeric points available		Go to the xPM Slot Summary to physically verify the number of Numeric points available. How many Numeric type points are currently available? See Table 5 - XYR Solution Point Types for the maximum number available per hardware type.
23	Are there adequate Numeric points available?	Yes / No	Subtract the # of RegPV points (Item 20) required from the total number of tags requiring a PV (Item 19) to get the number of Numeric points required. Do you have enough for those required per the prior checklist item?
24	How many flags from the transmitters require a "point.PVFL"?		There are a number of flags that are available from the transmitters. It is likely that only a subset of these will require storage as a ".PVFL". As well, only a subset of those requiring storage will require alarming. See Table 5 - XYR Solution Point Types to identify the number of available alarming and non-alarming flag points per hardware type.
25	Is the "Base Radio Online" point to be alarmed or not?	Yes / No	Any time the extended database is created, a point is created for this value as well. If the tag is to be alarmed, an additional alarmable tag will be created. Otherwise, the tag will be a simple non-alarmable flag point. **If YES, always add one (1) to the number of alarmable flags required. If NO, always add one (1) to the number of non-alarmable flags required.**
26	Number of flags requiring alarming		How many of the flags that will be moved to a point with a ".PVFL" will require alarming?
27	Are there adequate alarmable flags available?	Yes / No	Go to the xPM Slot Summary to physically verify the numbers available. Do you have enough for those required per the prior checklist item?
28	Number of non-alarming flag points available		Subtract from to get the number of non-alarmable flag points required. Go to the xPM Slot Summary to physically verify the numbers available. How many non-alarmable flag points are available?
29	Are there adequate non-alarmable flags available?	Yes / No	Subtract the # of alarmable Flag points (Item 26) from the total number of Flag points required (Item 24) to get the number of non-alarmable Flag points required. Go to the xPM Slot Summary to physically verify the numbers available. Do you have enough for those required per the prior checklist item?

Item	Description	Check and Entries	Additional Information
30	How many ProcMod points are available?		Go to the xPM Slot Summary to physically verify the numbers available. If an extended database is to be defined, anywhere from 1 to 7 ProcMod points will be required. The XYR Configurator is set to store approximately 100 Numeric and/or Flag transactions per ProcMod point.
31	What is the first alarmable flag slot to be used?		Go to the xPM Slot Summary to physically verify the first alarmable flag slot. The Configurator program presumes slots are consecutively available from the starting point. If this is not so, the slots can be manually adjusted by editing the resulting .EB file.
32	What is the first non-alarmable flag slot to be used?		Go to the xPM Slot Summary to physically verify the first non-alarmable flag slot. The Configurator program presumes slots are consecutively available from the starting point. If this is not so, the slots can be manually adjusted by editing the resulting .EB file.
33	What is the first available RegPV slot?		Go to the xPM Slot Summary to physically verify first available RegPV slot. The Configurator program presumes slots are consecutively available from the starting point. If this is not so, the slots can be manually adjusted by editing the resulting .EB file.
34	What is the first available Numeric slot?		Go to the xPM Slot Summary to physically verify the first available Numeric slot. The Configurator program presumes slots are consecutively available from the starting point. If this is not so, the slots can be manually adjusted by editing the resulting .EB file.
35	What is the first available Process Module point slot?		Go to the xPM Slot Summary to physically verify first available Process Module slot. The number of ProcMod points required will vary with the number of flags and numerics whose data requires transfer. The Configurator program presumes slots are consecutively available from the starting point. If this is not so, the slots can be manually adjusted by editing the resulting .EB file. We will need about 1 ProcMod point per 100 items being moved with CL (Flags and Numerics – not RegPV). See Table 5 - XYR Solution Point Types for the maximum number available per hardware type.

SETUP AND TROUBLE-SHOOTING GUIDE

This section provides some general guidelines for setting up and trouble-shooting the interface. When establishing communications between the SI-FTA and the XYR 5000 Base Radio, check the following items:

1. Make sure that the baud rate is configured correctly on both ends (SI-FTA and XYR).

2. Carefully check the construction and connection of the cable between the SI-FTA and the XYR 5000 Base Radio

3. Ensure that the XYR 5000 Base Radio is in the REG Mode.

4. Make sure that the SI-FTA array points have been loaded properly. Ensure that the first array contains the proper configuration data. The Array points MUST be loaded in order. That is - from the first to the last as described herin.

5. Check the individual arrays for the odd or unexpected status conditions.

6. Validate that data from each transmitter is being transferred from the XYR 5000 Base Radio to the SI-FTA Array database. The XYR_DIAG schematic can be used to verify this. If data is getting to the arrays, but not to the extended database, check to see if the RegPV points are active or if the ProcMod points have the CL loaded and are running properly.

7. If no data is being transferred to the SI-FTA Array database, a data analyzer can be placed on the communications link between the SI FTA and the XYR 5000 Base Radio. The link activity can then be examined and analyzed. It would be best to have someone familiar with data links and Modbus data structures perform this task.

8. If data is arriving at the array locations, but is not being updated on the RegPV point, ensure that the PTEXECST = ACTIVE and that the general input to the PV is properly configured to retrieve data from the correct array location.

9. If data is arriving at the array locations, but is not being updated on the Flag or Numeric points, ensure that the PROCMOD point is running without errors. As well, ensure that the proper CL to pull data from the Array Points and push the data to the downstream points (Flag / Numeric) is loaded and is running on the ProcMod point.

10. During loading of the database, if you get an error that seems to have to do with the tagname, ensure that you have NOT exceeded the maximum number of characters for a tagname on your system.

ORDERING INFORMATION

To order the XYR SI-FTA Serial Interface Field Termination Assembly for the XYR 5000 Base Radio, contact your HPS account manager.

The following items are available:

1 – XYR 5000 FTA Assembly.

1 - Binder of User Documentation.

1 – Database Configurator to help build the database required to implement the SI-FTA properly.

1 – LCN Native Window Graphic for showing the data from each transmitter